Main menu

Working Group on

Integrated Land Use Planning

Land Use Planning

Methods, Strategies and Tools

Deutsche Gesellschaft für
Technische Zusammenarbeit (GTZ) GmbH

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Integrated Land Use Planning

B. Amler, D. Betke, H. Eger, C. Ehrich,
A. Kohler, A. Kutter, A. von Lossau, U. Müller,
S. Seidemann, R. Steurer,
W. Zimmermann

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Working Group Integrated Land Use Planning:

B. Amler, D. Betke, H. Eger, Chr. Ehrich, U. Hoesle, A. Kohler, C. Küsel, A. v. Lossau, W. Lutz, U. Müller, T. Schwedersky, S. Seidemann, M. Siebert, A. Trux, W. Zimmermann

Editorial staff for the English Edition:

D. Betke, S. Klopfer, A. Kutter, B. Wehrmann

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Preface

Today, we live in a period characterised by a technical progress so dynamic that it goes beyond most peoples imagination. At the same time, we are confronted not only with the consequences of that progress e.g. the depletion of the land resources showing that growth is limited, but also with other environmental consequences which our development concepts did not foresee. This is an experience shared by almost all countries in the world.

There is a world-wide increase in the impoverishment of large groups of people. Their livelihood is under serious threat because of the increasing population and the related pressure on land resources. Under these conditions, traditional methods of using and treating flora, fauna, water and soil impose serious risks.

Given the shortage and the excessive exploitation of land resources, the search for effective planning approaches in land resource management started way back in the 1960s and 1970s. In the 1980s, participatory planning approaches increasingly replaced the strict technical top-down planning.

The Agenda 21, which was ratified by more than 170 nations at the Earth Summit in Rio de Janeiro in 1992, mentions frequently that land use planning (LUP) plays a key role in natural resource management. In the case of competing stakes and interests in the use of land, it allows to settle arising conflicts and to conciliate interests in such a way that agreements can be reached which guarantee the sustainability of land resources. In this process, LUP follows an integrated planning approach linking up various sectoral strategies, while at the same time it is closely related to other instruments of natural resource management such as land tenure and property rights.

These guidelines to LUP in the development co-operation are the result of an intensive discussion process with competent partners in the Federal Ministry of Development Co-operation (BMZ), with the German Development Bank (KfW) and with colleagues in the planning and development department of GTZ. Valuable scientific and practical experience and contributions have been incorporated in these guidelines. Despite it specifies a technical standpoint the reader is enabled

to form his or her own opinion. It describes the connection between LUP and other spatial and sectoral planning operations, it defines those participating in the planning process, it gives suggestions on how to carry out these processes in various types of projects and it demonstrates how the topic is incorporated in the macro-economic and social structures.

This publication is directed at our colleagues in the development co-operation, who should integrate it into their day-to-day operations. May we take this opportunity to express our appreciation to all our GTZ colleagues at home and abroad as well as to those active in research and education. To us, this teamwork is yet another indicator of that it is necessary and possible to produce meaningful, interdisciplinary work passing the boundaries of divisions and organisations.

Published in German in 1995, the guidelines have now been translated into English. Some updates have been made in the bibliography, however the content remains unchanged and has not lost any validity and importance.

Gunter Dresrüsse
Director, Planning and Development Department

Dr. Henner Meyer-Rühen
Head of Division, Rural Development

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D. Albrecht, CIAD, China, **M**. **Abeywickrama, H. Amararathna**, **X. Backhaus,** North Western Province Dry Zone Participatory Development Project, Sri Lanka; **M.S. Bakry**, Badan Pertanahan Nasional, Indonesia; **M. Bartels,** Consultant Second Land Resource Evaluation and Planning Project, Indonesia; **A. Bartholomäus** GTZ**; U. Baum** KfW; **O. Bawa Gaoh,** PASP II, Niger; **D. Berhe**, IGADD, Djibouti; **A. Bety,** PDRT, Niger**; G. Birbaumer,** Rio Checua, Columbia; **V. Böttcher**, GTZ, Nairobi; **M. von Boguslawski** GASP, Kenya; **A. Bourbouze,** IAM, France; **P.J. Bury** RDPP, Zambia; **I.S. Coulibaly** Proj. PASP II, Niger; O.K. Dah GIRNEM, Mauretania; **A. Darga** UGO/PNGT, Burkina Faso; **H.P. Debelius** DED, Ecuador; **S. Decurtins** HIAP, Tanzania; **H. Diedrich** Rio Guatiquia, Columbia; **P. Djohossou** P.G.R.N., Benin; **O. Dubois** Philippines; **E. Dudeck** GERENAT, Mali; **R. Dutsch** LRE San Pedro RPGIRMP, Norte, Paraguay; **T. Duve** VARENA / **ONAT**, Burkina Faso; **M von Eckert** TG-HDP, Thailand; **D. Effler** ALE, Berlin , **E. Eller** Philippine - German CEBU Upland Project, Philippines; **W. Engelberg** DED, Burkina Faso, **F. Faiss** RRDP Ichilo- Sara, Bolivia; **Y. Farka** PASPII, Niger; **A. Fleddermann** Upper Mahaweli Watershed Management Project, Sri Lanka; **C. Flores** SIG-CORPES, Columbia; **R. Förster** GTZ; **M. Froude** MARRP, Zimbabwe; **C. Gräfen** GTZ; **J. Griffin** SADP Zambia; **R. Gumz** RRDP Santa Cruz, Bolivia; **H. Häfner** PASPII, Niger; A**. Hahn** GTZ; **M.B. Halakhe**; Ministry of Agriculture and Livestock Development and Marketing, Kenya; **S. Hassane** SAP, Niger; **F. Hautecoeur** HELVETAS, Mali**; D. Helmstetter** ROUX YVAN, Franc; **H. Hertel** GTZ; **B. Hess** Pro Equidad, Columbia; **E.Hinojosa** CORDECRUZ, Bolivia; **C. Huwe** HIAP, Tanzania; **A. Issa** GRN, Niger; **B. Jäan** Ngobe, Panama; **K. Janz**, **P. Jouve**,**T. Jungjohann**, Transmara Development Programme, Kenya; **M. Kampmann** GTZ**; D. Kehrmann** SEGEPLAN, Guatemala; **F. Kempf** Recursos Naturales, Santa Cruz, Bolivia; **P.J. Kimman** Social Forestry Development Project, Indonesia; **U. Kievelitz** GTZ, Nepal; **E.J. Kirenga** Selous Conservation Program, Tanzania; **K. Kollmer** Landesamt für Flurordnung und Landesentwicklung, Karlsruhe; **B. Krasemann** GDS, Kenya; **J. Krug** Las Verapaces, Guatemala; **Kühn** ALE, Berlin; **W. Kunzel** Fiji-German

Forestry Project, Fiji; **D. Kwesha** Forestry Commission, Zimbabwe; **P.S. Lamprea** Rio Guatiquia, Columbia; **H. Lang**, **M. Larzilliere** Commission Financière de Développement, Niger; **M. Leupolt** GTZ; **C. Lobo** IG-WDP, India; **H. Loos** CARD, Zimbabwe; **D. Lubecki** ALE, Berlin; **B. Lüneburg** PASPII, Niger; **M. Manandhar** Churia Forest Development Project, Nepal; **G. Meinert** Cienaga Grande, Columbia; **C. Mersmann** GTZ; **G. Mertins** University of Marburg; **U. Mey** GTZ, Senegal; **W. Moosbrugge**r, Desertification Control Project of Patagonia, Argentina; **B. Mohns** Upper Mahaweli Watershed Management Project, Sri Lanka; **S. Mwichabe** Min. of Land Reclamation, Kenya; **P.N. Muchendu** Min. of Agriculture, Kenya; **S. Mustafa** QRDP, Egypt; **M. Nchafatso** Forestry Division, Lesotho**; H. Oebel** Atakora, Benin; **W. Ohligschläger** Corponario, Columbia; **A. Ojwang** GASP, Kenya; **R. von Oven** Recursos Naturales Santa Cruz, Bolivia; **P. Payet**, Niger; **G. Payr** Siran ,Forest Development Project, Pakistan; **T. Petermann** DSE; **W. Petuelli** CILLS, Burkina Faso; **A. Pröhl**, Chad; **G. Ramirez J**. SEGEPLAN, Guatemala; **M. Ranaivomanana** Integrated Forest Development, Madagascar; **M. Rapp** IP Latina; T. Rauch, **W. von Reitzenstein** Sucumbios, Ecuador; **R. Riethmüller RRDP** Kandy, Sri Lanka; **C. Roca** Ichilo-Sara,Bolivia; **R.M. Rochette** Club du Sahel, France; **F. Rock**; NAWACOP, Laos; **R. Rogg** DED, Berlin; **G. Roos**, **J.C. Sanchez**; Los Llanos, Argentina; **H. Schmidt**; Ministry of Agriculture, Lesotho; **M. Schneichel;** Bosque Seco, Dominican Republic; **H. Schneider** CORPONARINO, Columbia; **H. Schönwälder** Cebu Upland, Philippines; **S. Scholaen** DED, Philippines; **D.E. Schorlemer** SAPA, Burkina Faso; **B. Seitz, S. Seydou**, **K.M. Shakya** Gorkha Development Project, Nepal; **M. Shirima** TFAP North Pare, Tanzania; **R. Soldansky** PRO-Consult; **R. Solanilla** Rio Checua, Columbia; **M. Soriano** GIRMP, Philippines; **P. Stremplat-Platte** GTZ; **W. Thees** MISEREOR, **Aachen; J**. **Trevino** FDC, Bolivia; **K.-P. Traub** Forestry Commission Veg-RIS, Zimbabwe; **T. Vetter** QRDP, Egypt; **L. Waldmüller** SECAP, Tanzania; **J.H. Weik** GTZ, Jordan; **G. Wessling** Los Llanos, Argentina; **B. Wiese** GEOPLAN, **H. Woehl** Desertification Control Project, Namibia; **P. Wolter**, **D. Yameogo** Programme National de Gestion des Terroirs, Burkina Faso; **H. Zahorka** GTZ, Ethiopia; **A. Zarzycki** Recursos Naturales, Santa Cruz, Bolivia.

Table of Contents

Page

Introduction

These guidelines are a further step in developing an approach to land use planning (LUP) within the framework of development co-operation. They reflect the present status of the technical discussions initiated in 1992 within the GTZ working group on integrated land use planning (WGLUP).

More than one hundred technical co-operation projects on three continents supported by the various technical departments of GTZ were involved in the discussion. In addition, other agencies of the German Development Co-operation such as the German Development Service (DED) and the German Development Bank (KfW) have been participating in the discussion. Various supra-regional projects of the technical co-operation with strategic objectives are represented in the WGLUP including the pilot project, "Natural Resource Management by Self-Help Approaches" (NARMS), the pilot program "Gender and Women's Promotion" and the project "Desertification Control at the Observatoire du Sahara et du Sahel" (OSS). The working group includes consultants and foreign employees, temporary working at the GTZ headquarter. There are close contacts with the Technical University of Berlin and the Faculty of Geography at Marburg University.

The publication of these guidelines would not have been possible without the generous financial support from the projects "Natural Resource Management by Self-Help Approaches" (NARMS), "Desertification Control at the Observatoire du Sahara et du Sahel" (OSS), the pilot program "Gender and Women's Promotion" and the GTZ sector "Rural Regional and Communal Development".

The Working Group would like to express a special thanks to Mr. Ulrich Müller, Mr. Alois Kohler and Mr. Christian Ehrich for their technical contributions and the arrangement of this text.

Due to the interdisciplinary nature of the work carried out, diverse experience and the various points of view have been incorporated in the LUP concept. Each person involved has accentuated his or her areas of importance. The discussion was accompanied by workshops, conferences as well as the discussion and compilation of relevant documents. In 1993 and 1994, six one-week-workshops were held on land use planning throughout the world in four different languages.

These are:

- Berlin in July 1993 (in German)
- Kandy, Sri Lanka in October 1993 (in English)
- Villavicencio, Columbia in December 1993 (in Spanish)
- Niamey, Niger in January 1994 (in French)
- Naivasha, Kenya in March 1994 (in English)
- Santa Cruz, Bolivia in October 1994 (in Spanish)

As a result, the workshops have shown that there are both differences and similarities regarding the implementation of land use planning in the different parts of the world. In Asia, a separate working group has been established which held separate meetings in November, 1994 in Cebu, Philippines and in March, 1995 in Bonn, Germany. In addition, a working paper on land use planning focused on Asia has been published.

The continuing discussions on land use planning were also relevant for project formulation missions, for project progress reviews, for developing project offers, and for the training of foreign employees and counterpart staff. Land use planning is an integral part of the seminars on rural regional planning (RRP) held bi-annually and of individual training sessions for foreign employees abroad. In addition, during many informal discussions specific questions were debated and answers sought.

However, the work carried out in four languages has also shown how difficult it is to agree on a terminology for the conception of land use planning which is going to be accepted world-wide. The problems start with the translation of the term: Can land use planning be equated with the West- African "*Gestion du Terroir*"? or is the correct spanish translation, "*Planificacion del Uso de la Tierra*", "*Planificacion del Uso del Suelo*" or "*Planificacion del Manejo de los Recursos Naturales*"*?*

With these guidelines, we start an attempt to develop a meaningful understanding, to give guidance and to establish standards in planning land use. In the process of doing so, a certain amount of leeway shall be maintained in order to take regional and local peculiarities into consideration when using the land use planning approach. The concept of LUP considers regional and local conditions in order to meet their peculiarities in an optimal way.

Consequently, ***Land Use Planning: Methods, Strategies and Tools*** are rather guidelines than a classic manual offering a

blueprint. It brings together important ideas and experiences which should be adapted and applied to the specific working conditions in a project. The application for these guidelines is exclusively targeted at rural regions. Urban centres are therefore not included.

The content is divided into seven chapters, which are assigned to three different subjects. Chapters 1 and 2 define the policy and planning framework of the GTZ-concept to land use planning. Chapter 3 introduces the components for the organisation of an implementation-orientated planning process. Chapters 4 to 7 discuss, some important aspects of implementation and of land use planning in greater detail. Additional questions arising in the various chapters are dealt with in the eight appendices.

A summary and a list of contents for the various sub-chapters can be found at the beginning of each chapter. Examples from projects are integrated into the text. They do not demonstrate how things must be done but rather how they could be done. These guidelines cannot answer all questions, and do not intend to do so, either. The Working Group does not offer its services as a contact partner only, but also refers to experience documented elsewhere. Both standard documents and recent publications have been selected for further references.

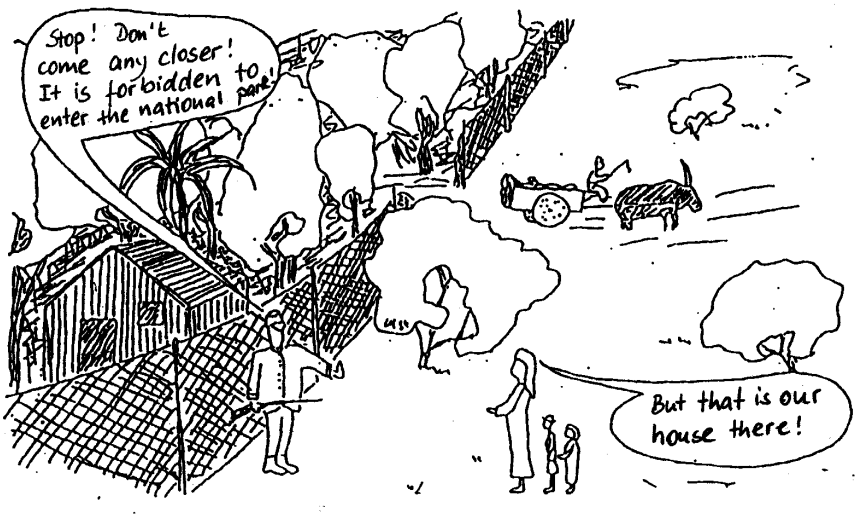
1 What is Land Use Planning ?

This chapter describes the concept of land use planning. The basic understanding or model drawn up by the "Working Group on Integrated Land Use Planning" (WGLUP) is stated as follows:

Land use planning (LUP) is an iterative process based on the dialogue amongst all stakeholders aiming at the negotiation and decision for a sustainable form of land use in rural areas as well as initiating and monitoring its implementation.

In this chapter, the assumptions within this basic understanding are discussed and the objective of land use planning is defined. Land use planning provides the prerequisites for achieving a sustainable form of land use which is acceptable as far as the social and environmental contexts are concerned and is desired by the society while making sound economic sense.

The presentation of the basic principles of LUP, such as the principle of beneficiary group differentiation, the iterative nature of the process or the guidance for implementation gives a sound and integrated picture of the process. Finally, the applicability of LUP in development co-operation is discussed.



1.1 Central Idea of Land Use Planning

Wherever groups of people use land and its resources, land use is planned, being aware of it or not. Land use does not consider production only, but also land functions such as protected areas, land recreation, road-building, waste disposal sides and use-restricted areas such as buffer zones for exhaust gases, areas for regenerating groundwater, buffer zones for traffic noise pollution, etc.

Land use planning (LUP) is not only practised when national authorities intervene or as a result of development co-operation projects. LUP happens in every society, even if the term is not used.

The subject of these guidelines is land use planning in the context of development co-operation. It deals with cases in which an intervention occurs in order to improve land use and to sustain natural resources. In the past, decisions made on land use have resulted in the degradation of land resources, or an imbalance between supply and demand of those resources.

Here, land use planning is understood as an instrument of the technical co-operation used in the following types of projects:

- resources management (forestry, production systems compatible with resources and agroforestry, pasture management, nature protection and erosion control)
- rural regional development
- community support and village development

- government consultation (environmental strategy planning, agricultural sector planning, development planning, assessment of land potential).

These LUP-guidelines are not intended to standardise and impose compulsory procedures for all conceivable variants. It appears more appropriate to offer support for different situations, taking into consideration the specific conditions of the technical co-operation. In addition, the exact role and scope of LUP within the technical co-operation has still to be determined according to the context and local conditions by those responsible for planning and implementation of projects.

Different views

Even fundamental concepts are perceived differently within each project. Whereas some will consider an approach which gives these directives from above on how land related subjects should be organised in a defined region, others will promote a process of organisation and learning.

The first model of land use planning follows the sense of a rational model of planning. It is assumed that the optimisation of the set of planning tools in connection with rationalisation of the planning organisation will result in the best possible solution to the problem to be solved. Any social conflicts are disregarded in this process (technical planning approach).

The objective of the latter concept is to create a social platform for solving problems and settling conflicts. Land use planning is thereby described as a political process in which the constellation of forces is crucial to the result. In this type of planning process the stakes of differing groups with different power potential and different influence meet one another. In this process the mechanisms of conflict resolution and forming a consensus are the major political factors (participatory planning approach).

Fundamental Understanding of LUP

The working group on integrated land use planning (WGLUP) has formulated the following basic understanding based on previous project experience:

Land use planning in the technical co-operation is an iterative process based on the dialogue amongst all participants. It is aimed at the definition of decisions on a sustainable form of land use in rural areas and the initiation of the appropriate measures for implementation and monitoring.

This basic understanding contains the following definitions:

1. The core element in land use planning is the dialogue amongst all participants to reach decisions based on consensus. A major task of land use planning is to accompany and motivate the participants and those affected in order to attain a conciliation of interests concerning land resources, types and extent of land use.
2. The dialogue-orientated learning and negotiation process amongst the participants leads to the development of their planning capacities and to sustaining co-operative relations at local level.
3. Participants in land use planning are direct and indirect land users, as well as those affected by the consequences of land use activities. Another group is formed by people who often have political or economic influence; this includes authorities, organisations, middlemen and women, processing industries for agricultural products, etc. However, the most important target group in land use planning is made up of the direct land users.
4. The Land Use Planning process covers all steps extending from the collection of data and information through its processing, analysis, discussion and evaluation right up to the negotiation for a consensus concerning the form of land use to be practised. This includes the prerequisites for preparing, initiating and implementing the plan. However, in the context of the technical co-operation, during the LUP process not necessarily all planned measures to be carried out will be implemented in their entirety.
5. "Iteration" means putting the result of the decision-making process into practice and converting it into a situation specific step-by-step planning. It is a repeated or recurring process that seeks to reach an optimal solution. New developments and knowledge gained during the planning process are incorporated and may require revision and updating. This may result in a repetition of steps which have already been taken and e.g. can mean a renewed data collection, analysis, discussion and decision.
6. Land use planning is first and foremost a process of clarification and understanding between people who together wish to change something and prepare future actions systematically. In the process, the elements of a

plan are worked out co-operatively. The core part of a planning process is therefore a commonly desired objective to be achieved by implementing the plan. Time planning is linked to the physical/geographic/ecological planning of areas, and the two are mutually dependent.

7. Rural areas, in contrast to urban areas are characterised by agricultural and forestry production having relatively low population and building densities. Infrastructure, facilities or services have a relatively low importance.
8. Land use is considered to be sustainable when it is both socially and environmentally compatible desired by the society, technically viable and when it makes economic sense. This means:

- Social justice:

  When considering the effects of planning measures, attention should be paid to the distribution and kind of benefits. Those should be spread in such a way that even socially weak parties should participate in the process.

- Long-term sustainability of natural resources:

  The land utilisation type must be designed to ensure that the natural basis of living is sustained in the long-term run, i.e. the use of the land should correspond to its natural potential. Existing environmental damage should be minimised and damaging developments avoided by supporting and developing suitable approaches.

- Acceptance and social compatibility:

  The measures applied are to be desired, accepted, supported and largely carried out by those affected by them. The effects of such measures can only be sustainable if they are socially compatible and culturally suitable and if they take into account local knowledge and capacities.

- Economic efficiency:

  The measures planned should be designed to contribute to the long-term security of the economic basis of living of the people. Therefore, the measures should be self-financing and thereby economically justified. In this way, they contribute to the improvement of the living conditions and to the overall economic development.

- Viability:

The planned measures should be sound with the level of tolerance of the local population in terms of technology, economy and organisation. Decisions are generally guided by the local technological understanding and culture as well as the available resources. Even if large expenses can be considered as investments for the future, the magnitude must be assessed realistically and the amortisation should be kept within clear time limits. This applies particularly to major infrastructural measures.

Objective of Land Use Planning

To sum up, the following objective of land use planning can be defined:

Land use planning creates the prerequisites required to achieve a type of land use, which is sustainable, socially and environmentally compatible, socially desirable and economically sound. It sets in motion social processes of decision making and consensus building concerning the use and protection of private, communal or public areas.

1.2 Principles of Land Use Planning

On the basis of the central idea , eleven principles are explained below and converted into proposals for practical actions in subsequent chapters.

1st Principle

Land use planning is orientated to local conditions in terms of both method and content.

Planning approaches often fail because global models and implementation strategies are applied and taken over automatically and uncritically. But LUP is not a standardised procedure which is uniform in its application world-wide. Its content is based on an initial regional or local situation analysis.

2nd Principle

Land use planning considers cultural viewpoints and builds up on local environmental knowledge.

Rural societies or groups can often provide complex indigenous knowledge of the environment. If this is the case, such local knowledge should be part of the basis for planning and implementing a sustainable land use.

Land use planning takes into account traditional strategies for solving problems and conflicts. 3rd Principle

Traditional rural societies have their own way of approaching problems and settling conflicts concerning land use. In the process of land use planning, such mechanisms have to be recognised, understood and taken into account.

Land use planning assumes a concept which understands rural development to be a "bottom-up" process based on self-help and self-responsibility. 4th Principle

The population should actively participate in the process of LUP. The results of planning and the implementation of measures can only be sustainable if plans are made with and by the people, not behind them or even against them. Planning is therefore not just a matter for experts, but should be carried out together with those affected by it. To ensure a feeling of ownership concerning self-help activities, people who are affected have to be involved in the planning process from the early beginning.

Land use planning is a dialogue, creating the prerequisites for the successful negotiation and co-operation among stakeholders. 5th Principle

The core task of LUP consists of initiating a process of communication and co-operation which "allows all participants to formulate their interests and objectives in the dialogue". On the basis of sound decisions a sustainable form of land use is proposed "whereby the aims and interests of other participating groups are taken into account to the greatest possible extent" (GTZ/Rauch 1993, p.16).

An important element of participation-orientated LUP is the identification of the various groups of participants and differentiating them in terms of their use of and access to land resources. In addition, their position on the social scale (gender approach) and their capacities, either as stakeholders or as members of authorities and of other organisations have to be considered.

Land use planning is a process leading to an improvement in the capacity of the participants to plan and take actions. 6th Principle

The participatory methods used in all planning steps of LUP promote the technical and organisational capabilities of all participants, thereby extending their capacity to plan and to act. In the medium term, this qualification process leads to an improvement in the capacity of local groups for self-determination.

7th Principle

Land use planning requires transparency. Therefore, free access to information for all participants is a prerequisite.

Transparency in planning and the extent to which stakeholders are informed, strengthen both their willingness and capacity to participate in planning and decision-making. It increases the motivation of the people for creating sustainable results. An open exchange of information leads to discussions about objectives among the key figures and promotes the willingness to reach a consensus. The dissemination of information in the local language(s) contributes to an improved transparency. In addition, it strengthens the trust of the population in land use planning activities.

8th Principle

The differentiation of stakeholders and the gender approach are core principles in land use planning.

A prerequisite for realistic land use planning is the detailed analysis of the various interest groups. The aim is to find out the various interests of the participants in order to create a basis for the negotiation and decision-making process. Men and women often do not have the same access to land and have specific ways of articulating themselves. Different interests are arising from the economic and social character of their roles and scope of duties. Therefore, the role of gender is an important criterion when differentiating stakeholders.

9th Principle

Land use planning is based on interdisciplinary co-operation.

The ecological, economic, technical, financial, social and cultural dimensions of land use make it necessary to work with an interdisciplinary approach. Land use planning provides many interfaces with other technical disciplines and planning fields. It uses a broad spectrum of tools. An one-sided view of planning will be avoided due to the interdisciplinary and intersectoral configuration of the planning groups.

Land use planning is an iterative process; it is the flexible and open reaction based on new findings and changing conditions.

10th Principle

LUP is more than the preparation of a planning document; it is an iterative process. Iteration is both the principle and the method simultaneously. New developments and findings are specifically observed and incorporated into the planning process. It may lead to the revision of decision and the repetition of steps already taken. This can render superfluous both analyses and data bases which would have been set up at some expense. Iterative planning requires flexibility in planning, but in no way constitutes a "concealed lack of planning".

Land use planning is implementation-orientated.

11th Principle

Land use planning has to consider how the negotiated decisions and the solutions identified are to be implemented. LUP does not end with the land use plan.

The implementation of limited measures (e.g. the development of cultivation techniques which conserve land resources) right at the outset, or parallel to the LUP process, plays an important role in increasing the trust of the people in the village as far as the planning process is concerned.

1.3 Implementing Land Use Planning in Development Co-operation

Development projects use LUP for a variety of reasons. The objectives and the expected impact are manifold, and depend on the specific situation. An evaluation of the experiences gained from over 100 projects in the technical co-operation has resulted in the following overview:

Linking present and long-term problems

Land use planning is implemented in order to associate solutions for present problems (e.g. soil erosion, insufficient agricultural production and low income in rural households) with the planning towards long-term conservation and sustainable use of land resources. Therefore such planning is based on precautions and is future-oriented based on the interests, viewpoints and problem-solving potential of the participants.

Example: Columbia

The primary objective of the **"Rio Checua Project in Columbia"** is to stop the fast progressing degradation of soils on the slopes of selected valleys of the Eastern Cordilleras using appropriate protection measures. LUP is used in order to identify the required and suitable measures as well as appropriate agencies for their implementation.

With the successful implementation of protection measures against soil erosion, the prerequisites are created for solving other long-term development problems: securing the supply of drinking water for Bogotá or increasing the income of the small-scale farming population in the watershed areas concerned.

Solving these development problems serves the sustainability of the improvements through erosion protection. Degradation of land resources is essentially a consequence of unsuitable land utilisation, which has failed to be adapted due to e.g. strong economic pressure. Due to the importance of the project area for the supply of drinking water for Bogotá, opportunities emerged to mobilise additional financial resources which were urgently needed in order to continue with the protective measures.

1.3.1 Combining measures from different sectors

Land use planning as promoted by GTZ has an integrated character because experience has shown that problems in the field of land resources management cannot be solved by sectoral measures only (e.g. terraces). It is necessary to find appropriate combinations of different measures in technical, economic and social fields and to define these in harmony with each other. This is achieved through land use planning.

Example: Argentina

In the project "Integrated Rural Development Los Llanos, La Rioja, Argentina", land use planning is used as a method to control desertification. Due to the increasing pressure on land, land resources are under stress. As a result, desertification processes are accelerating and have to be seriously considered. On the basis of the strategic guidelines of the Regional-Oriented Program Planning (ROPP) as well as the development of innovative solutions to these problems related to desertification (e.g. improved water reservoirs, solar power units, improved pasture management, etc.) village land use plans are developed in

a participatory process. In these plans is defined what measure should be taken where and by whom based on bio-physical criteria (where are the most degraded areas?) and social criteria (differentiated understanding of the interests and preferences of men and women). Innovative solutions to problems are jointly developed with the farmers who receive temporary support by the project. Before the actual planning process is getting started, a dialogue with the people is the initial step to facilitate the contacts between the project and the target group.

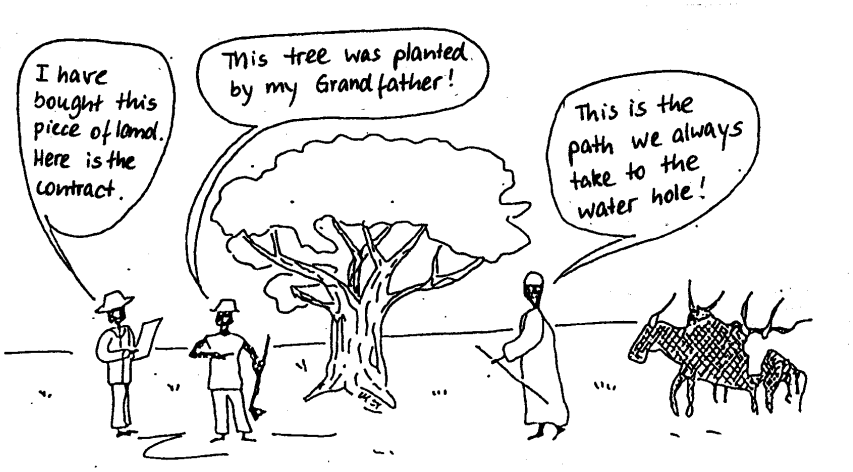
Lobby for protection of resources

GTZ promotes integrated land use planning in order to harmonise the objectives related to resource protection with those focused on local economic interests. LUP takes on the function of an attorney for the concerns of land resources protection which often has no lobby.

Example: Bolivia

The large region in the East of Bolivia is characterised by a fast spreading agricultural colonisation and an extensive tree felling. It is the task of the project "Protection of Natural Resources in the Department of Santa Cruz" to promote the concerns of land resources conservation and sustainable resources management based on expertise and using modern technology (GIS and satellite images).

A departmental land use plan has been drawn up which combines the results of various different base maps (soils, vegetation, suitability of locations for agricultural production and forestry). The plan contains suggestions for new protection zones and is used as a tool for negotiations in the public dialogue and for advising in community planning. In addition, new concepts of land protection are derived from the regional plan, e.g. improving land rights and extending the territories of indigenous groups of the population. Thanks to the frequent quoting of the plans in the local press, transparency is ensured regarding the ecological consequences of certain project activities. In the long-term perspective, if any activities in the areas do not meet the requirements of resource protection this should result in a decrease of the public acceptance.



Support in Settling Conflicts

LUP is used in order to find solutions to conflicts among various groups of the population, among villages, between villages and authorities or large companies, between farmers and pastoralists, etc. In this process, rules of using the land are negotiated among the parties involved in the conflict.

Example: Benin

In the project "Improving Resources Management in the North of Benin", an agreement has been reached between farmers and livestock owners on the basis of integrated land use planning. Corridors have been created within zones of agricultural use through which the livestock owners can guide their animals to the waterholes and pastures. The participants visited the corridors together and marked the trees with coloured signs as boundaries.

Promoting disadvantaged groups and strengthening local planning competence

Emphasise is given to the promotion of disadvantaged groups and to improve their access to land resources. Women play an active role in LUP, thus their status in the village and in society has to be increased. By applying the principle "learning by doing", participatory LUP is intended to improve the planning competence at local level.

Example: Zambia

In the agricultural development project **"Siavonga in Zambia"** the participation of women emerged as one of the strengths in land use planning: "The LUP process allowed the women to play an active role and increase their status in the village (...) . Not only did women gain confidence by being included in all training activities, but men also acknowledged women's abilities" (GTZ/OSS, 1994b).

The different approaches complement each other and reflect the spectrum of contributions to solutions expected by a process in land use planning. The examples show, participation-oriented LUP has already a notable success in projects of the technical co-operation. Integrated land use planning should be applied when the biophysical dimension has to be combined with social, political, cultural, economic and legal aspects. In other words, LUP is applied when social conflicts whose origins often lie in the nature of the current land use or in the form of access to resources must be settled.

Photo 1: Inappropriate land management practices may cause severe degradation, Patagonia (Argentina).

The land use planning approach as presented in this chapter is very ambitious; a note of caution is therefore expressed against too high expectations. Various obstacles are placed in the path which may hamper the achievement of the above-mentioned objectives. Creative, realistic and professional handling of the

tools in LUP are required to cope with these obstacles. Land use planning only makes sense if the contributions to the solutions in the development co-operation can be anchored in a sustainable way, and there is a prospect of applying the approach not only locally but also at larger scales

The following check list serves to test whether it is appropriate to apply land use planning:

Check List

It is appropriate to apply land use planning if:

- negotiation is required between short and medium-term economic objectives on the one hand and the interests of land resources management on the other as well if positive economic effects can be expected in the long term run as a result of this negotiation process;
- land use conflicts are to be avoided or settled in connection with competing stakes concerning land use and with an unclear land right situation, or if mediation is necessary;
- natural resources are to be protected and rehabilitated by:
  * planning sustainable land use systems,
  * implementing national and regional objectives related to the protection of resources, which have priority,
  * setting up biological reserves and conservation areas,
  * monitoring changes in land use to serve the national resources planning,
  * assessment and identifying of the intervention zones and areas for development projects,
  * planning infrastructural measures such as road-building or irrigation projects aiming at conserving land resources;
- unexplored land use potential has to be identified and evaluated;
- existing land use has to be optimised;
- the objective is to create environmental awareness among the people as well as the authorities;
- sectoral and national development plans have to be harmonised with the plans of the different stakeholder groups also considering the land potential;
- new settlement areas are to be planned and divided into plots.

Photo 2: **Soil Erosion in the highlands of Wello, Amhara Region (Ethiopia)**

2 Integrating Land Use Planning into Planning Systems

This chapter shows that in order to achieve sustainable land use planning, it is important to link its content with other planning processes. It becomes clear that planning systems are a product of the development of the society and can therefore be very different from country to country. A differentiation is made between central, decentralised and heterogeneous planning systems. The development tendencies of planning systems are presented. The main tasks of LUP at different planning levels and some interfaces in the vertical and horizontal linkages are described. Land use planning is understood as partially integrating and sector-overlapping planning. It is aimed at the object of reference, which is land use, and is not suitable for solving all local problems. It cannot replace an overall planning related to areas, but it can be part of village, district or provincial planning.

2.1 Planning Systems, Land Use Planning and Individual Objectives

Plans for using land resources are made everywhere. Farmers and livestock owners decide which products they want to have in what areas whether to increase or reduce the size of their herds and whether to fence off pasture land or to keep meadows for growing fodder only. Large companies dealing with wood and energy as well as authorities concerned with road-building or conservation of the nature also decide which areas they wish to use for their purpose. In addition, there are countless other individual plans by various people, groups and organisations at different levels regarding land use in rural areas

Competing interests in the use of land resources lead to social conflicts. Often, the interests of farmers and tenants are at a disadvantage in comparison to the interests of large companies or authorities. Also, public interests such as the protection of land resources, are given too little attention in favour of the short-term interests of individuals in making profit.

State authorities, and in many cases projects of the development co-operation intervene with the aim of overcoming these problems. Such instances of intervention occur according

to the instructions from the authority, mostly within a clearly defined framework and restricted to a specific planning level and plan content. As a result, only partial solutions are achieved. However, if different planning tasks (land use planning, traffic planning, regional planning) and planning levels (village, district, regional, national) are integrated into an overall planning system, it is more likely that the sustainability of agreements reached within a restricted framework (e.g. in village land use planning) can be guaranteed.

The following are elements of a planning system:

1. Different types of planning

In principle, a differentiation is made between sectoral and technical planning (e.g. transportation planning or the planning of water resources) and planning which overlaps sectors or is partially integrative. The nature of the planning process differs depending on its specific task.

2. Overall Goals of Planning

These cover the central idea of planning, such as participation, conservation of land resources or balancing of regional disparities. In a democratic system the overall goals of planning correspond to the fundamental principles and values in a society.

3. Definition of responsibilities

Planning assignments are mandated to certain administrative levels (national, regional, district, community) and authorities (sectoral and territorial, Department of Agriculture and community).

4. Regulating the relationship between the various types of planning

The nature of relationships between the various types of planning is stipulated. This results in a vertical linkages being made between the planning levels and a horizontal linkages between the various technical and partially integrative processes.

5. Rules

The set of rules for the participation of those people affected by planning and their representation at higher levels of planning are manifested. Mechanisms for settling conflicts of interests are agreed on.

Nowadays there are planning system approaches in most countries of the world. In an ideal situation, all planning processes in a region or country are harmonised with each other

and complement each other mutually. Competencies and responsibilities are clearly defined and the interests of all groups of the population are taken into consideration equally when negotiation takes place on the plans. The reality, however, is different from theory, even it is often far from it.

It is not unusual for activities of a development co-operation project - in which participation mechanisms, conciliation of interests and manifold co-operations within the framework of a land use planning process are promoted - to be in contradiction to the usual, official ways and accepted top-down planning mechanisms. Due to their activities in the field of planning, projects intervene to a certain extent in existing planning systems. Friction and conflicts can therefore not be avoided in most instances. Developing an enhanced planning system should be a gradual transition process. Thus planning practices which are based on co-operation and participation should be carefully introduced and integrated as well be linked to the existing planning systems.

2.2 Planning Systems in the Social and Political Context

Planning systems are an expression of social and political conditions in respect of space and time. They are expressed by means of legal regulations(planning laws), social conventions and rules. In addition to codified agreements (laws, administrative regulations), there are others which have been agreed verbally in form of traditional rules of conduct. Those are significant at local level.

In relation with the legal norms of a planning system, a special terminology is used which may have different meanings. This also applies to the term "land use planning", which is used in some countries to cover planning for urban regions too. This is in contrast to the concept presented here.

Planning systems differ from country to country. A rough differentiation is made between three types: central, decentralised and heterogeneous planning systems.

Centralised Systems

Centralised planning systems are characterised by clear and top-down oriented directive structures. In this process, the task of the lower administrative levels is to implement the directives of the central authorities. All decisions are made at the highest level, which at the same time also approves the decisions at all levels. Problems arise as a result of a lack of flexibility in adapting to the local peculiarities.

Example: Indonesia

In Indonesia the **National Land Agency (NLA)** acts in close co-operation with national development planning and spatial planning bodies. NLA covers the whole process of LUP right up to decision-making. Within this framework of a centrally and hierarchically organised structure, state inspections and the control of land use planning should be put into practice, and planning as well as co-ordination deficits should be bridged.

The NLA administration extends over three stages from the national level through the provincial level to the district level. On the basis of the overall planning objectives, data and information with relevance to land use planning are collected and processed at each level. In addition, potential land use, priority fields and areas for actual development projects are being identified. The results are transmitted centrally to the state authority responsible for the overall planning. These results are the basis for the formulation of the national land use strategies. Decisions having relevance to land use serve as a directive both for land planning by the sectoral ministries and for the LUP agencies of the NLA at subordinate levels. Finally, the central planning directives reach the local users through this hierarchy; "local spatial design or side plans" define their scope for action. In principle, they receive technical support from the lower government authorities, but are at the same time subject to inspections during the implementation. The monitoring of the land use development is done by the central NLA authority.

Decentralised Systems

In decentralised systems certain powers and at least partial budget autonomy are transferred to lower administrative levels, with the aim of creating participatory decision-making structures. In this process, attempts are often made to take regional and local peculiarities into account using appropriate special regulations, and then integrate them into the overall planning system. Such systems have been set up since the mid-1980s, even in countries which until that time had been characterised to a large extent by centralised planning systems (e.g. Bolivia). The federal system of the Federal Republic of Germany was often given as model. The cost and efforts involved in setting up such complex structures exceeds the means of many countries. In addition, problems can arise concerning the efficiency of this planning system.

Heterogeneous Systems

At higher administrative levels (national and regional) heterogeneous systems are characterised by modern planning mechanisms, following the example of former colonial powers and other industrialised nations. Different regulating mechanisms may work at the lower level. Important city regions are often the exception. Deficits arise in the exchange between the planning levels since central planning concepts are too inflexible for local structures. Local regulating mechanisms do not usually include the provision for processes for which there are no models in the traditional society. Examples can be found in the implementation of large-scale projects in road-building and large-scale migration movements. Systems like this are typical of many African nations.

Policies in Various Planning Systems influencing LUP

Various components influence and control land use. Generally, this includes policies on infrastructure, taxes, credit and import/export as well as environmental and development policies. These political focal points create the framework for medium-term planning visions. But land use is planned at local level. Therefore national directives have to be translated into rules for planning land use at local level.

Countries with a strongly centralised administration tend to regulate land use objectives even at local levels in a "top- down" manner.

In contrast, in decentralised planning models land use regulations at community or village level should be agreed by the land users themselves, linked to each other at regional level and co-ordinated with national development projects. The prerequisite for this is that the stakeholders should have the capacity to co-operate and create suitable co-ordination mechanisms related to land use.

In heterogeneous systems, land use decisions at local levels are made exclusively among the stakeholders, but they do not have any legal protection against the intervention by third parties at a later stage.

Development trends

Planning systems are not static, but are subject to continuous change. This reflects the processes of social transformation as much as new problems or changed perception of problems. In

the following paragraph, an attempt will be made to demonstrate some tendencies which have been observed in many countries, but which do not necessarily apply in every case. It is the intention to make suggestions for an improved understanding of planning systems as well as the role and importance of land use planning within these systems.

Increasingly, additional and new tasks, such as environmental protection and natural resources management, are being integrated into existing planning systems. Usually, they adjust established types of planning or introduce new ones.

Nowadays, land use planning is part of the planning regulations of many countries without necessarily using the term "land use planning". There is also a considerable range of understandings of the term land use planning as traditions and development processes differ from country to country.

New Scope of Duties

Related to the planning contents, the tasks can be manifold. The planning process involves an increase of duties, especially of competencies and responsibilities at lower planning levels, which play a crucial role in implementing the plan. This is mostly linked to a policy of decentralisation which transfers budgetary responsibilities to the communities. Unfortunately, however, in many developing countries the reality is far from this ideal, and planning competencies and structures have been restricted until now to the higher levels only.

Problems with Co-ordination

In many countries land use planning is applied as an approach which lacks links to other planning units. Thus land use planning is understood as regional or national strategic planning only, or it is restricted to the village level. Local agreements on land use do not receive the necessary backing from the higher levels and, when interests come into play which affect the society as a whole (e.g. large road-building projects), they are not taken into account. Another problem is posed by the lacking co-ordination between the organisations concerned with sectoral and intersectoral aspects. In this respect overlapping competencies and power-motivated interests play an important role and have to be considered.

Putting New Ideas into Practice

It is becoming more and more accepted that land use plans can only be carried out in a sustainable way if they are shared and owned by the people. Nevertheless this realisation is rarely translated into purposeful actions. Planning should be shifted from offices and conference rooms to dialogues involving the public. Nowadays "politically correct"- slogans (participation by the people) characterises now the language of planning. However, in many instances there is still a lack of both concepts and experience how this can be put into practice.

In developing countries, innovations in planning are often copied from the social learning process done in industrialised nations without being firmly rooted in the thinking of the population. Development co-operation projects are aimed at raising awareness and creating consciousness for new knowledge and at spreading this knowledge. Swift adaptation in many developing countries is, however, often superficial and rather serves the purpose of guaranteeing that the project continues to be financed.

In addition to these externally induced planning innovations, there are now many examples of an independent development or refinement of planning tools. In this respect, development co-operation plays an important role also by supporting such processes. This applies particularly to land use planning, which in developing countries has provided a considerable impact, for example in the areas of village land use planning and in settling land use conflicts.

As a result of recent discussions about planning tools, many developing countries are now facing the challenge of abandoning rigid and overriding regulations which hamper the free play of forces and which have often resulted in the use of evasion/avoidance tactics. At the same time new and refined planning structures should be established also at lower levels. Nevertheless a long tradition of strictly hierarchical authorities and bureaucracies is a constraint for achieving both objectives.

In many developing countries there is still a considerable discrepancy between the existing planning legislation, which often includes more radical wording than in some industrialised countries, and planning reality. Many plans which have been made with great ambitions, do not get implemented and are shelved by the authorities. Deficits in plan implementation are often closely connected to an insufficient technical competence

as far as the planning agencies are concerned. This applies particularly to the corresponding organisations at lower level.

In contrast, in many countries there are traditional, non-codified forms of agreements on land use which work well at local level. However, they often fail when social relationships become more complex (e.g. spontaneous migration, pressure of use on areas which had previously been reserved for pastoralists). Nevertheless they provide important connecting links for LUP at local level.

2.3 Land Use Planning at Different Planning Levels and the Vertical and Horizontal Linkages

Land use planning is a partially integrating and sector overlapping process. The planning objects are the land resources. Therefore, LUP is not suitable for solving all local problems, nor can it replace the overall planning for an area.

The basic technical strategy in LUP is to plan land use according to the suitability and the various needs in the area to be considered. As long as the objectives of land use planning (see Chapter 1) are sufficiently taken into consideration, there is no need to carry out LUP separately.

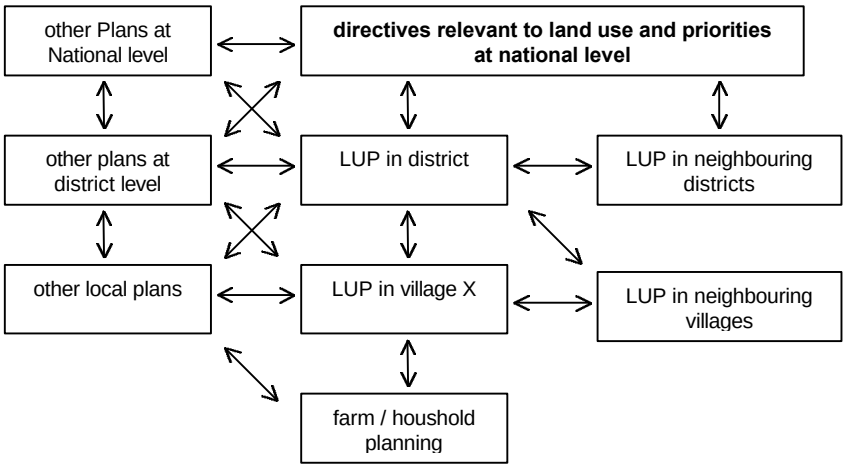
Overview 1: What distinguishes LUP from other sector-overlapping planning processes?

Planning process	Key question	Objective
Land Use Planning	What is a certain area of land suitable for and what demands to use it exist?	Optimisation of land use in an area in terms of • sustainability which is adapted to the area, • meeting needs for long term conservation of land resources and • the settlement of conflicts between interest groups
Regional Planning	Which functions are required in a specific region and how can they be distributed best in the area?	Best possible supply to a specific(administrative) unit with productive, social and infrastructural facilities and their most efficient possible use of available means
Regionally Orientated Programme Planning (ROPP)	What activities must be carried out in order to achieve a certain development or project objective?	Identification of core problems and appropriate packages of responsive measures

Links between land use plans in different areas as well as between land use plans and other area-related plans are necessary both horizontally (from village to village, district to

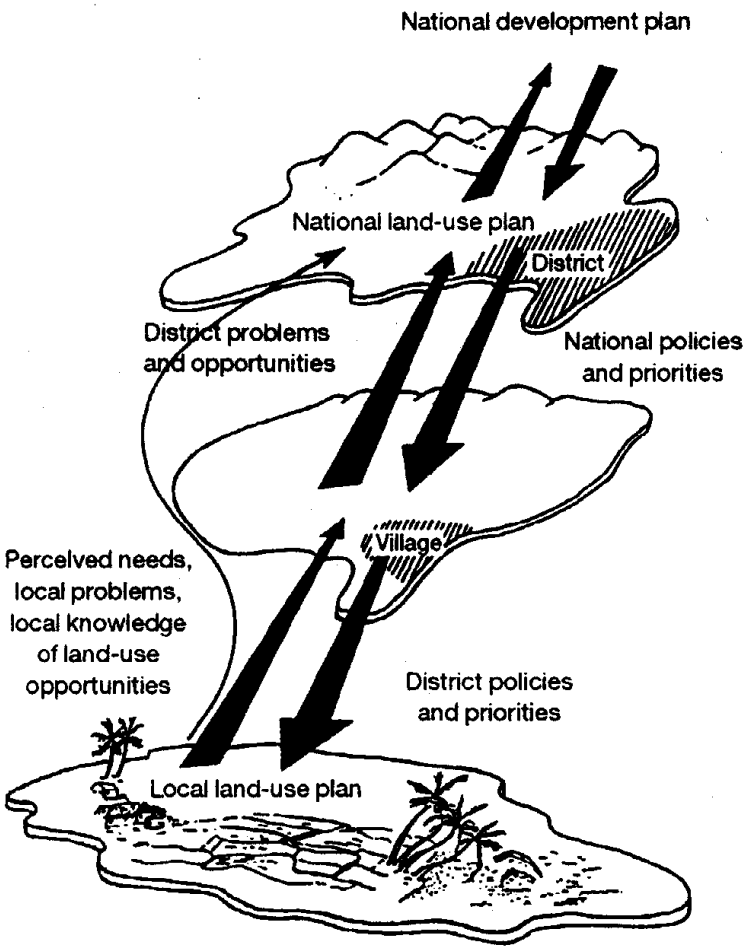
district, etc.) and vertically (between village and district, region and nation) (Figure 1).

Figure 1 Vertical and Horizontal Links in Land Use Planning (idealised figure)



Vertical and horizontal links between plans are more effective if various contact points between the different planning agencies (authorities, population, etc.) exist. The flow of information should run in two directions. This is especially necessary as far as exchange between the planning levels is concerned. Thinking in hierarchical structures frequently hampers the free exchange of information. Figure 2 illustrates the way in which the flow of information should run between village, district and nation levels. The concept on which this model is based is called the counterflow principle .

Figure 2 **Land Use Planning, Flow of Information and Relation to Other Planning at Various Levels**



Source: FAO 1993, p.6

The central questions related to the **vertical** link **are:**

- In what way can strategic directives from superior planning at a decentralised level be adapted to local conditions and peculiarities?
- To what extent do decisions made at a lower level require the approval by the next higher instance?
- How can decisions made at village level be protected against third party interests?

Important criteria of **horizontal** planning are:

- Mechanisms for settling conflicts between sectoral agencies, of which one is often more influential than the other.
- Binding nature of already existing planning frameworks (e.g. overall planning) to other planning frameworks (e.g. sectoral planning).

Nowadays, land use planning is used at all planning levels. The hierarchy of planning levels depends on existing planning systems, the size of the area, etc. Overview 2 provides information on the tasks of LUP, taking a six-stage model as basis. However, in the subsequent discussion, a simple, three-stage model is used (local, regional and national level).

Overview 2 Objectives and Responsibilities in LUP according to Planning Levels

Planning Level	Objective of LUP	Responsibilities
Nation	• guidelines for policies on conservation and resources use; • normative directives for the use of resources: legal framework (land and planning rights); • drafting national programs for the use and protection of land resources (tropical forest action plan, desertification control programs, investment guidelines); • integration of directives relevant to LUP; • establishment of national conservation areas (national parks); • co-ordination of activities also relevant to LUP (comprehensive spatial planning); • considering and transmitting the need for action articulated at lower level.	• relevant ministries or technical authorities and organisations; • inter-ministerial committees.
Federal State/ Province	• political and administrative acceptance of LUP activities; • establishment of institutional and organisational structures; • translating national and regional guidelines (comprehensive spatial planning, regional and sectoral planning) into strategies; • formulating basic directives of LUP at lower level (translating regional guidelines into strategies); • identifying areas with potentials and areas with risks; • establishing protected areas; • co-ordination of activities relevant to LUP; • considering and transmitting the need for action articulated at lower level.	• political and administrative committees; • governmental and non-governmental technical services and sectoral agencies.
Region/District	• regulation of land use and of checking procedures; • establishment of technical services; • training for participants (capacity building); • promoting dialogue; • putting strategies for land use in concrete terms; • offering solutions to problems (problem resolution platform); • establishment of mechanisms for transmitting the needs identified at lower level.	• political and administrative committees; • forum with responsibility for application of guidelines; • governmental and non-governmen-tal technical services.
Community/ Village	• conciliation of interests; • offering solutions to problems, establishing institutions dealing with LUP-issues; • (if necessary based on a traditional system); • decisions on the implementation of LUP; • including farms/households in the LUP process; • articulating the need for action for superior levels.	• socially accepted committee; • planning group as service unit of the higher level (including local experts and facilitators).
Farming House-hold Agricultural Operation	• organisation and planning of living area and area for other land uses.	• farmer s family.
Individual	• satisfying individual needs by using land.	-individual.

Local Level

At local level, the most important subject is the preparation of the implementation of the LUP. The plan at this level is very detailed, and it is possible for all participants to take part directly in the decision-making process. Traditional and often non-codified forms of agreement on land use become significant. State intervention is restricted to fields in which these traditional systems fail (e.g. supra-regional conflicts on land use or increasing degradation of land resources). There are many interfaces between LUP at local level and other local or superior planning activities.

Preparing for Planning

National and regional objectives constitute important general conditions for the preparation of the planning process. The availability of local staff and finances is determined by the superior planning level. If the people at local level are sufficiently well organised, they will try to ensure that the necessary financial means are made available to support their land use planning activities effectively.

Collection and Analysis of Existing Data

While collecting and analysing data and information, institutions and organisations which are active in the field of planning are analysed. In addition, existing plans and individual development activities are going to be reviewed. This information is taken into account when plans are drawn up.

Drawing up and Negotiating Plans

In the process of drawing up and negotiating plans, conflicts between local development objectives in land use and other local interests as well as superior planning objectives are identified. Solutions acceptable to all participants are proposed. In this way, agreements can be sought between neighbouring villages concerning an adjoining area of protected woodland, or water conservation areas can be successfully established respecting also the interests of the urban supply of drinking water. Representatives of interest groups affected by local planning decisions are involved in the discussion process. Objectives of existing sectoral planning (agriculture, forestry, nature conservation, tourism) are reflected in the village land use plan. Any nature conservation areas, state forests, country road routes, etc. lying within the village boundaries are indicated on the map.

Implementation of the Plan

To implement the plan, applications for the financing of the activities have to be considered if necessary. The planning framework is made public and, will have a legal back-up by the

community administration or the superior authorities. This is intended to ensure that the prioritisation of village-level land use planning, i.e. priority for intensive arable farming or extensive pasture land is taken sufficiently into account in new planning processes, such as the extension of a protected area.

Regional Level

Land use planning at the regional or district level has a kind of "linking function" between implementation and national strategic planning. One of its major tasks is to provide information for subordinate and superior planning levels, i.e. for the population as the decision-makers using privately the areas or for the state as trustee of public interests. A well-prepared and realistic presentation of the present land use situation in the region including a simple preview of potential future developments is indispensable. It makes the planning processes more transparent, and thereby improves the opportunities of disadvantaged groups. In general, such groups do not have sufficient access to information.

It is impossible to achieve direct participation by all individuals taking part at regional and district level. Interest groups therefore need representation structures and recognised organisations. Special attention should be given to "weaker" groups in order to promote their integration.

Tasks

With respect to the plan implementation at local level, district planning has the following tasks:

- to provide information on national development objectives and guidelines;
- to determine the need for technical training and consultation of the population, authorities and organisations at local level and to provide appropriate proposals;
- to mediate in conflicts between stakeholders;
- to identify land use objectives of regional interest (e.g. ensuring urban water supply);
- to identify and promote disadvantaged groups (e.g. pastoralists) which are not sufficiently integrated into local planning;

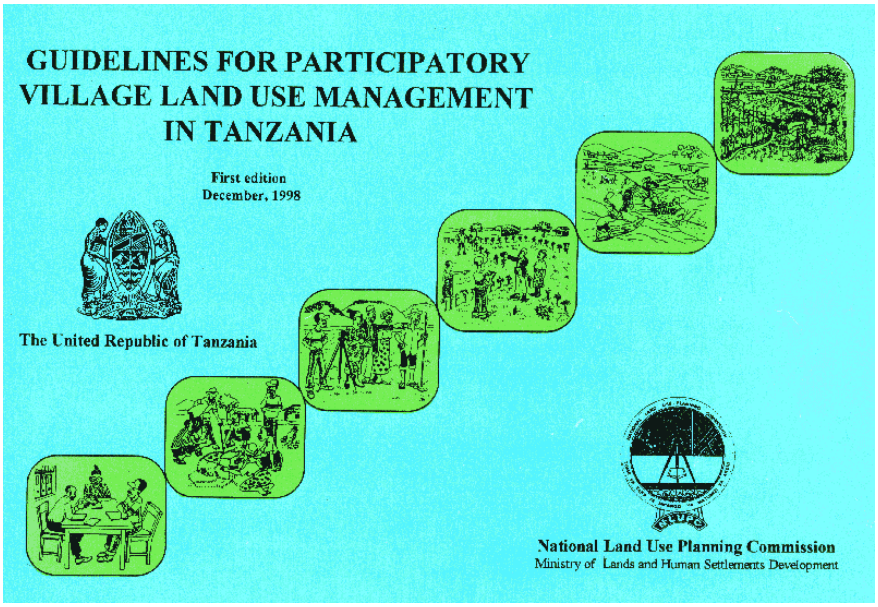
- to derive simple criteria by means of which the needs of regional interests and of disadvantaged groups can be brought as aims into local discussion processes.

Regional directives

Plans at regional or district level are not absolutely clear-cut as far as the delimitation of the areas are concerned. They give an orientation without excessively restricting the opportunities for local action. The plans presents what future development concerning land use is socially desirable and how disadvantaged groups in particular can be involved. Boundaries of land units are usually expressed by straight lines or are slightly curved. In reality, those boundaries do not match the inherent complexity of the different ecosystems. At local level, the planning area including boundaries in which the activities will take place have to be clarified in co-operation with a competent regional authority.

If needed, the regional directive can also contain a simple lists of criteria only, for example, statements such as On slopes of over 10 degrees incline, arable land use is only permitted in agreement with the district authority upon submission of their proposed protective measures or Each village land use plan should provide information on who has participated in drawing up the plan .

Figure 3: **Guidelines for Participatory Village Land Use Management in Tanzania prepared by the National Land Use Planning Commission as an example of an assignment of land use planning at national level.**



Planning Agencies

Land use planning at higher planning levels, focuses mainly on strategic aspects. General laws and regulations on implementation are passed, development objectives are set and budgets are assigned to the project. In this instance too, participation is ensured via the representative structures.

In general, state authorities should be suitable planning agencies for LUP. Given the demands of harmonising and ensuring plans, peoples organisations and non-governmental organisations (NGOs) alone are often too weak to take on the duties of a planning agency. The responsibility for carrying out land use planning should therefore lie in the hands of the state authorities. However, complementary to the planning, which is carried out by the population, these authorities should be given a co-ordinating role to play.

The authorities responsible can be regional and local administrative bodies (community, district, etc.) as long as they have specialised technical know-how and the financial resources. In addition, they should not be used as political instruments for parties to an excessive extent. If it is the case, or if the allocation of LUP to these bodies is not desirable for other reasons, there is the possibility of placing land use planning with sectoral

agencies (Bureau of Agriculture, Nature Conservation agency etc.). These receive the mandate on the condition that they take care of the necessary co-ordination with other authorities to a sufficient degree and that they take into consideration aspects, which lie outside their sectoral responsibility.

Role of Technical Co-operation

If there are no regional or national land use planning structures or no clear directives (cf. Chapter 2.2), or if other superior planning is restricted to individual sectors (road building, energy etc) LUP at local level will remain without the necessary recognition or legal back-up. This makes it difficult to solve supra-local problems, and sufficient personnel and financial resources are not provided. There is no transparency in the co-ordination with existing sectoral plans. In addition, representatives of powerful groups are often not prepared either to participate in negotiation processes at local level, or to recognise the results.

Conversely, the regional and national LUP will not have an impact if there is no planning at local level in which the directives of LUP can be integrated. Technical co-operation projects have developed three different concepts for dealing with such situations (Diagram 3).

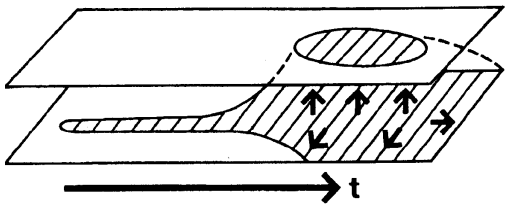
- A project starts with LUP at local level. Positive experiences in pilot villages are spread to other areas. At the same time the project extends its action area and incorporates its experiences in the rudimentary superior planning structures.
- A project has the mandate to promote LUP at regional and national levels. It convinces its partner of the necessity to plan the implementation at local level, and will support the implementation in selected villages. Experiences are evaluated and form the basis for a new orientation in regional or national land use planning.
- Two or more projects, of which one is placed at national or regional level and the other(s) at local level, supplement each other and collaborate.

Diagr. 3 Promoting the integration of LUP at various planning levels using technical co-operation projects

a) Experiences in local LUP are spread to other areas and are incorporated into higher planning levels

Regional/National Level

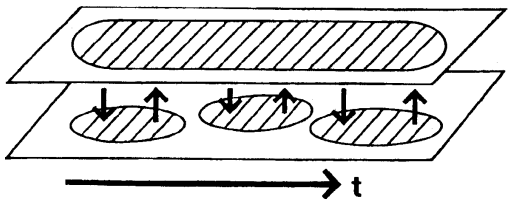
Local Level



b) Regional/national promotion of LUP and experiences at local level in selected villages

Regional/National Level

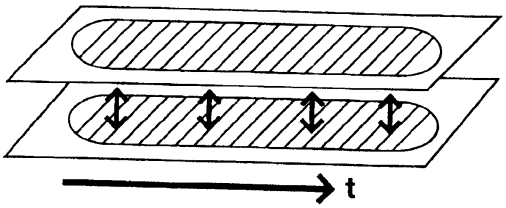
Local Level



c) Mutual support of a regional/national project and a local project (program)

Regional/National Level

Local Level



3 Elements of an Implementation-Orientated Planning Process

Based on the premises that land use planning is to be understood as an iterative process, the following chapter introduces the elements of the LUP process: preparation of LUP, collection and analysis of data and information, capacity building, drawing up plans, negotiating and decision-making, and validation of plans. Of particular significance in this process is the conflict management, mediating and moderating between opposing interests and positions, and building up manifold co-operative relations. Because of its special role, another important element of the planning process, namely initiating and accompanying the implementation, is dealt with separately in Chapter 6.

The elements of the implementation-orientated planning process mentioned above are guided by the given objective. They are moving between optimising planning, related conflicts and settling those conflicts. In the first instance, the main objective is to

- optimise land use according to the available local resources and at the same time to
- minimise damage.
- Secondly, the objective is to
- contribute more and more to the settlement of conflicts
  - between villages
  - between arable farmers and pastoralists,
  - between settlers and residents,
  - between different ethnic groups,
  - between forestry authorities and village communities,
  - between large landowners and those owning no land,

- between landless farmers and agricultural reform authorities or the judiciary,
- between ethnic groups and new settlers, and so on.

3.1 Planning as an Iterative Process

It is still a widespread understanding in many countries and organisations that planning must be carried out in clearly defined steps which are separate from each other and which must be followed in a certain order. The alternative concept presented below is well-proven in practice of the technical co-operation and which is called an iterative process.

Sometimes, steps which are allocated to different elements of the planning process, are carried out simultaneously. The implementation of pilot measures begins at the same time as the collection and analysis of data and information. Negotiating processes accompany the entire course of planning. Conclusions for further actions are drawn from the experiences and knowledge gained during the steps already carried out. The same procedure has to be followed if the general conditions are changing.

Learning Process

Iterative planning is based on a continuous learning process. It requires the readiness of all those involved to keep asking and learning more and more. Each activity, each interaction between those involved in the planning process provide new information and experience. This improves the understanding of the situation and increases the knowledge on the measures carried out. In case the measures have not the effects intended, the iterative planning makes it possible to react swiftly and make the necessary changes or adjustments.

Land use planning is not a straight step-by-step procedure, but is iterative and cyclical. This means that its course is sporadic, requiring backtracking resulting from experience. Also approved objectives need to be constantly rechecked and changed when they are no longer appropriate.

However, an understanding of planning as an iterative process does not mean that there is no need for a time frame within which certain activities must be concluded. In this way, it may become clear immediately before the final plan is approved that key figures might not have been considered. If this is the case, two alternatives for action may be considered:

1) The participants may decide to finalise the plan first and adapt it later in a further planning process, including all stakeholders;

2) The planning process is going to be stopped and started again immediately after. That means for many participants a U-turn, which is difficult for them to understand. In addition, it causes a considerable delay in finalising the plan implementation.

Advantages and disadvantages of both alternatives have to be taken into consideration. It is important to deal openly with such conflict situations. This requires that all participants develop an understanding for the tension arising between meeting the directives and the necessity of a flexible adaptation.

Planning seen as an iterative process makes it easier to react to aberrations and learn from mistakes before they have disastrous consequences. However, this only applies when mistakes are recognised, reacted and learned from them. Iteration leads step-by-step through processes of recognition and learning, via diversions and resistance approaches to solving problems on a broad social basis. It leads to solutions and agreements accepted by all participants. These are processes which, via diversions and resistance, lead to changes, which in turn are the prerequisites for sustainable development.

Evaluating the Need for Land Use Planning

3.2 Important Steps in the Preparation of Land Use Planning

Often the initiative for changing land use practices comes not from the immediate stakeholders themselves but from authorities, governmental and non-governmental organisations or communities. At the same time, changes in land use can be the consequence of technical projects in rural areas.

The need for interventions at local level by external organisations can have various reasons:

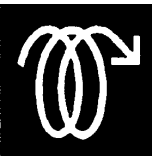
- due to the planning objectives at higher level, some areas are selected as pilot areas;
- an increase of environmental destruction is to be counteracted;
- land use conflicts are to be settled;
- directives for land use in respect of higher level planning interests are to be forced (e.g. water supply).

Awareness creation

The local population often perceives environmental risks differently from authorities, consultants or technical specialists. Dangers to or the destruction of land resources often do not become a critically recognised issue until it actually influences the land use. Any potential risk to the environment should therefore

be discussed already in the problem analysis stage by the different interest groups. The risks should be evaluated and taken into account both at the planning stage and during the plan implementation.

The problems and needs expressed by the local population may be the result and consequence of environmental problems already perceived. In this case, the causes must be identified and weighed up during the participatory problem analysis in order propose appropriate solution strategies during the planning process. The basis for determining the need for land use planning is the problem analysis, during which the causes and interconnected causes are being identified, analysed, evaluated and discussed.



Prerequisites for Land Use Planning

In order to implement the land use plan, certain prerequisites are required. These are prescribed essentially by the framework of the general conditions. How to deal with those conditions in a LUP process as well as the limits for LUP intervention are discussed in Chapter 7.

One important condition for implementing planned agreements is the existence of a clearly defined need and, in conjunction with this, of clear objectives shared by all participants and involved parties resulting from negotiation processes.

Local Beyond this, the following local preconditions must be created:

- the availability of information on national and regional plans,
- directives and regulations, as well as their analysis and consideration during implementation;
- clarification of work to be accomplished and responsibilities during the implementation, as well as a realistic time plan, in which the priorities and working rhythms of the rural stakeholders must be taken into account;
- ensuring the necessary extension and financial services;
- using all alternatives of compensation where use is going to be restricted;
- minimal logistical preconditions.

Medium-term The preconditions listed above can be created relatively easy and with little effort by the project directly or with its support. There are, however, some prerequisites, such as freedom of assembly and freedom of speech, which cannot be influenced by the project. Others can only be created with a great effort. These may include the support in establishing an efficient planning agency or the creation of a willingness to set-up a dialogue with the stakeholders. A project often requires the support by other institutions, organisations, people or projects. Stakeholders can also become important supportive partners in creating an enabling environment. It is therefore of strategic significance to set up a dialogue and to co-operate with the involved parties.

Openness, dialogue and co-operation are key terms in the gradual achievement of further prerequisites:

- flexibility in actions by the agency, rejecting of formal or theoretical working approaches, turning to a transparent and participatory working style;
- extending the possibilities of including non-governmental partners;
- increased acceptance of participatory working methods by the participating population, even where these have no tradition;
- development of articulated conceptions of land use by the stakeholders;
- awareness of disadvantaged groups by supporting agencies and other governmental authorities, and the will to change their situation.

Reference is made here to chapter 5.4 which presents the central significance of capacity building.

Entering into a Dialogue with the Participants

The dialogue with stakeholders requires profound knowledge and empathy. In discussions with the groups of land users affected, it cannot be assumed that already in the beginning of the dialogue aspects such as ecology or landscape rehabilitation will be seen as a priorities. Experience has shown that it is not opportune to discuss primarily focussed on environmental aspects. The destruction of land resources is often not perceived as important; rather life threatening problems are foremost. Small farmers in Uttar Pradesh/India are not going to change their cultivation practices in order to protect the Ganges delta at Bengal from silting up further, even though this would be highly recommendable from a superior point of view. No goat-herdsman in Northern Mali is going to stop pruning local acacia trees, and thus destroying them in the medium-term, in order to stop the extension of the Sahel and the decrease in rainfall. The aim, therefore, is to find initial points from which effective economic advantages can be expected in the shortest possible time. In order to achieve this, it is necessary to understand how the land users perceive the world around them.

Example: Namibia

In a project in **Namibia,** the general situation of the land users was first described for the year 1995. On this basis, a projection was made for the year 2000. In both cases, the land users described the situation using their own criteria. For example the need to earn income from non-agricultural sources, the need for organisations at community level and the difficult access to markets. Based on this description, potential areas were identified in which intervention (not only by the project) would be necessary in the year 2000 in order to ensure the sustainable use of land resources. The following issues were mentioned: sustainable use of pasture, access to marketing and credit organisations, the creation of alternative sources of income and investment, the resettlement of wealthy farmers, land use rights, organisations in rural areas, and so on.

At project or technical level, superior and/or long-term aspects form the basis for potential activities. They must be taken into account choosing initial measures aimed at building up trust. At this level the question of balancing between ecological and economic aspects must be clarified. A more

detailed analysis may show that the formula "ecology = long-term economy" does not necessarily have to apply.

Example:
Burkina Faso

The technical co-operation project PATECORE located in the central provinces of Burkina Faso is a good example reflecting the foregoing. Rows of stones (*diguettes en pierre)* were introduced in order to prevent soil erosion in the fields. The objective of ecological rehabilitation of the region coincides with the short and medium-term interests of the farmers - both men and women - in increasing yields and reducing the risk related to production. Already in the first year, farmers were able to achieve an important increase in yields from their fields. However, it is also important for the farmers to reduce the risk of crop failure by taking appropriate measures in areas of low rainfall. In addition, areas considered as completely degraded can be rehabilitated and used again.

The problem of starting the dialogue is not only a question of content but also of vocabulary. The term "natural or land resources" means little to farmers, either in Africa or in Europe. It is one of the slogans, which only starts to take on meaning towards the end of a long planning discussion. Small farmers and settlers on new land primarily want to achieve a basic income in order to survive. Only if this is achieved, they can be approached concerning long-term or large-scale activities.

In resource management projects and rural regional development projects, the co-operation between the local level and the project is often initiated by small-scale measures aimed at building up trust. Such activities are not only small-scale measures focussed on infrastructure, but also the support in negotiations with authorities or conflict partners.

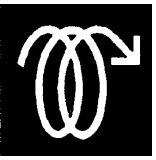
The local population and the project may get to know each other when jointly drilling a well or when carrying out measures to conserve soil and water. The parties check each other out; the interest in co-operating in the project is tested. It is observed and evaluated whether promises are kept and to what extent achievements are made.

If small-scale measures prove to be successful and interesting for the target group in the short term, an increased demand at

local level can be realised and the widescale implementation of measures is to be considered. This is the entry point for land use planning at village level; individual measures are initially the focal point but from the wish to extend these measures the necessity to draw up plans arises. More complex requirements become obvious.

Example Tanzania

In the area of the **Handeni Integrated Agroforestry Project (HIAP)** in Tanzania, land conflicts are between arable farmers and semi-nomadic livestock owners. In the project area, the population growth rate is over 3% per annum; an escalation of these conflicts is foreseeable. In addition, the access to waterholes in the valley, which are increasingly used for arable farming is getting more difficult.



In the village governments, the Masai-tribe was only poorly represented and therefore in disputes usually disadvantaged. With growing self-confidence, they transmitted their requests to ever-higher levels, but without any great success. Finally, the problem landed with the Ministry of Lands, Housing and Urban Development. From there, top-down pressure was exerted until the topic, which meanwhile had become politically explosive, landed again on the desks of the village government. The Masai were demanding the title of an autonomous village in order to safeguard their land use rights.

This was an entry point for the initial activities in Kiberashi, in a project which was actually to support the raising of seedlings. The Masai were trying to demand their land use rights also by forming permanent structures, therefore started planting commercially interesting trees. In 1995 HIAP was asked explicitly by the Executive Secretary of the Mvunge Ward (the administrative unit above village level) to help solving the conflict. The request referred to three villages, namely Kiberashi, Gombero and Kwamaligwa.

All three villages agreed to a participatory land use plan, which would reduce the conflict potential, including a balanced representation of the conflict parties. In this, however, HIAP was not a neutral body, but represented the need for the protection of land resources. The focal point was not only to soften or solve conflicts, but as far as possible to introduce sustainable land use practices (including the protection of major forestry areas and rain-fed watershed areas).

Determining the Unit of Planning

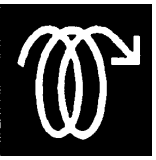
What is an adequate unit for the project area in which land use planning is carried out: a watershed area, a community territory, an administrative unit or some other geographical unit? There is no simple rule, and the final decision will always depend on the actual situation. However, a decision must be made together with the population and the local organisations. Various criteria will play a role: the group consciousness of the target population, their areas for living and production, the territorial boundaries of jurisdiction of the local organisations and the type of the project. If the project is focussed on community development, the project area will possibly cover the community territory; if it is a land resources management project, the planning area depends rather on the sense of belonging to a social group or on the area of use by the target population. If water supply is the central entry point for a project, the watershed area may constitute an adequate planning unit. Sometimes the boundaries of a planning area will change during the course of implementation. This happens especially if nomadic livestock owners appear unexpectedly who - because they only come through the region once a year - were not previously recognised as stakeholders.

Mobile User Groups

In regions where nomadic livestock owners, hunters or collectors also use the land resources, they must be involved in diagnosis, planning and implementation within the framework of land use planning just as much as the resident land users (most of whom are arable farmers) - both men and women. Also the villages must take into account the particularities of this mobile part of the population, especially if they are often not noticed by village superiors. The special problems for LUP related to mobile farmers is presented in detail in Appendix 4.

Land use planning must deal with the understanding of all problems, of potentials and alternatives for land use in all areas of the planning unit. It cannot be concerned selectively with partial areas, which are particularly intact or degraded. The whole area used by the stakeholders has to be planned. However, implementation activities will not have to cover the areas to the same extent. An exception might be villages in which "nothing is right any more" but which is more of a theoretical case.

Once the planning area is agreed upon, the second step covers often the identification of pilot zones or "pilot villages". This is important when a project cannot work intensively and equally with the participating organisations in the entire planning area (see Chapter 6.3).



the diagnostic phase Within the framework of land use planning the phase covering the collection of data and information and its analysis- will not stop with the start of planning and its implementation. However, from the viewpoint of a technical co-operation project, it introduces the actual start of the land use planning process. According to the principle of participation, the development of the capacity of the land users for self-help is of major importance. In this process knowledge, problems, viewpoints, expectations and fears of the stakeholders are incorporated into the planning process. The sustainability of the interventions and agreements identified therein is considered to be relatively secure. The common learning process promotes the capacity for the articulation of problems and planning competence as well as guides the finding of solutions.

What data and information are required?

Using participatory methods for collecting and analysing data and information, the basic data and their analysis prescribed at the superior level (regional, national, international) are often neglected. Nevertheless this data, also must be collected and taken into account in both the planning and implementation process. It is not always possible to proceed completely in a participatory manner, because representatives of national authorities are often not physically present. It is, however, exactly these interrelated political, economic, social and cultural structures and development tendencies, which decide about the success and the sustainability of a land use planning process. This is especially the case when important participants are not completely convinced that participatory methods are useful.

Sources of Information

The above-mentioned basic data can be traced in the following sources:

- Data and development plans (national/regional);
- consultation with technical services;
- research papers;
- statistics;

- information on state budgets and other financial sources (e.g. other donors);
- reports on activities of other projects and non-governmental organisations.

When collecting, it should be remembered that not all data available will be relevant to land use planning. Thus, a balanced "economy of data" is to be applied to avoid a confusing maze of data .

Local Viewpoints

In addition to the evaluation of secondary information, direct contacts and discussions with key informants especially with older people - are of special significance. The information given is not only more up-to-date, but it also reflects the viewpoint of the local population on superior directives.

The viewpoint and perception of various different groups and genders can be very different. In addition, it is not only important with reference to these directives, but also with reference to their own living conditions, in their direct living area.

How is this perceived and evaluated? How is the historical development reflected? How were land use conflicts solved traditionally?

ROPP

If there is a lack of important basic data and information, the instrument "Regionally Oriented Programme Planning" (ROPP) may be another tool to gather data. ROPP consists of two working stages:

1) an analysis of the situation, and
2) the elaboration of the regional development concept (see also Appendix 3).

Necessary basic data for the LUP can be derived by using ROPP.

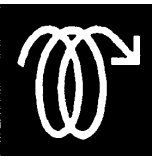
Preparation and Analysis

In general, specific data on the entire planning area is required for LUP:

- data on the available land resources,
- the socio-economic, socio-cultural, organisational and institutional conditions,
- on the history of the region, and
- the future visions of the different stakeholder groups.

In this process, it is not sufficient to collect data and information only. It must also be prepared, analysed and processed in order to make it useful for LUP. Secondary data sources are easy to find but harder to process. In case the project collects the necessary data, the collection can be already focussed on the use and is therefore simpler and less comprehensive. However, this should not lead to collecting more primary data as their evaluation and preparation is too expensive.

The significance of indigenous knowledge



Generally, smallholder farmers, new settlers or nomadic livestock owners have their own ideas about adequate use of land resources. Particularly in older settlement areas with traditional arable farming and livestock- keeping societies, the experience and knowledge collected over generations manifest themselves in the impressive diversity and adaptation of land use systems. Not only is arable farming with its sophisticated crop rotation systems and agricultural technologies, together with livestock-keeping of economic significance, but also the use of other land resources such as wild plants, medicinal herbs, wild animals, fishing or honey, are included in the traditional land use systems.

The indigenous knowledge is an important potential when the development of technical aspects or agreements and decisions on land use are being discussed. It is not easy to collect and document indigenous knowledge. In addition to a lack of a common vocabulary, especially concerning the environment, a major problem is the different interpretation of the ecological context by the experts educated in the West and the local population. The evaluation of a forest by the population for purposes of its use stands in contrast to a scientific and ecological evaluation in which conservation (soil erosion, biodiversity) has the priority. In addition, it includes religious and cultural aspects ("holy trees or secret forests").

Participatory Methods

A good opportunity to avoid that external consultants build their own one sided picture when interpreting and analysing the reality, the application of participatory methods of collecting and planning is recommended. These methods make it possible for outsiders to get to know and to understand seemingly irrational decisions on land use by getting familiar with the background as well as cultural values and norms.

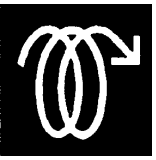
The indigenous knowledge combined with the land use systems are a potential for LUP decisions. To what extent it can be used as development potential depends very much on the political and economic structures of the higher levels and the development tendencies. In any case, it is important to know the comprehensive knowledge and the traditional land use systems in order to adapt project measures and balance out any deficits in these systems.

Photo 3: **Participatory planning of pilot measures at village level, Integrated Rural Development Project, La Rioja (Argentina).**

Example: Burkina Faso

The *karité* is a fruit tree widespread in the **Oubitrenga Province in Burkina Faso**. The *karité n*uts are used to produce *karité* butter and soap. This is profitable, and constitutes an important source of monetary income for women whose duty it is to collect the fruits.

Within the framework of LUP, the population in the village of Zippelin noticed: the use of *karité* nuts by neighbouring villages is considerably reducing the profits for the village; the nuts are being harvested long before they are actually ripe; the removal of the nuts from the village territory is disadvantageous for maintaining the tree crops.



Before harvesting, the right of access of the women of Zippelin to the *karité* nuts in neighbouring villages was regulated by a fetish, Zeppelin itself had abandoned this restriction about 60 years ago. In discussions with the extension group of the PATECORE project, the village decided to reintroduce the fetish. After performing the necessary ceremonies, the traditional regulating mechanism, together with its harsh penalties, came back into force. To date, no instance of disregard has been discovered, and the harvest passed off to the satisfaction of the women. An extended application of the fetish to protect more land is now being discussed. (*This may not sound like land use planning but local beliefs can be used to achieve certain land use planning objectives.)*

Important tools and techniques

The presentation of tools and techniques in this section, as well as in the entire manual, does not claim to be complete. The intention is to present those tools and techniques which have been successfully used in the German technical co-operation and which are considered to be important in the context of land use planning.

PRA

Those processes, tools and techniques which enable the relevant people, groups and organisations to actively participate in the process (see also Chapter 4) are also of major importance for collecting and analysing information within the framework of LUP. The methods and techniques which are part of the Participatory Rural Appraisal (PRA) approach are especially well-proven. Actually, this approach was developed on the basis of

experience in adult education and action research. In addition, approaches which have developed from ethnographical, ethnological and ethno-ecological research, such as for example the indigenous knowledge approaches, are gaining importance.

These diagnostic and planning approaches focus on active participation and are of great importance to LUP. It is not only technically simple to collect information in this way, but especially the content corresponds to the requirements of land use planning:

- information is collected and analysed jointly by all participating stakeholder groups. The work should initially be carried out in small, homogeneous sub-groups, to register their particular needs and special interests as well as stakes;
- it is use and action oriented;
- it registers and reflects important local knowledge of the area;
- it provides knowledge on local land use systems;
- it mediates views and values of the participants;
- it can be collected with a clear objective, thus data graveyards can be avoided;
- a problem-oriented analysis of the area is possible by transect walks, local soil classifications, etc. and an analysis of cultural peculiarities and social relations is focused on;
- it helps to overcome existing language barriers, as local vocabulary is documented at the same time.

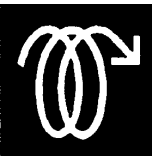
Creative Use of Methods

Above and beyond the known set of tools, there is a broad spectrum of methods and techniques which also have their own justification and usefulness, depending on the situation. Many alternative methods of assessment and of analysis are developed locally and used with a varying degree of success. Responses to concrete demands must be found in a creative way. It also depends on the local needs whether the special data and socio-economic information collected in a participatory scheme by conventional, scientific and sociological methods are to be safeguarded, checked and/or supplemented.

The following technical data can be collected relatively quickly locally using own experience as well as the participation of male and female farmers who are familiar with the area:

Example of data which can be collected locally:
Data on land resources use for food production

- rate of over-grazing in an area: what is the maximum hillside slope for grazing?
- quality of the soils (pH value, texture, etc): what proportion of the rainfall is available for plants and what proportion runs off the surface?
- What is the maximum hillside slope, with and without terracing, where arable farming is possible without problems?
- What is the relation between firewood needs and firewood production?
- To what extent is the potential food production used in the area? What more can be produced using adapted intensification techniques?
- What is the degree of self-supply by the local population?
- Is the availability of manpower a problem?



Land units and zoning as tools in implementation-orientated diagnosis and planning

The method of defining units and sub-units in bio-physical diagnosis and planning is known.

Especially in larger areas, dividing it into units or zones according to certain criteria allows a detailed analysis of characteristics and interrelations. Even during transect walks, it is often recognised that rural societies subdivide their areas into units. Thus, differentiations such as high- and lowlands, plains and steep slopes, wet and dry zones, will be found just as differentiation which are more use-orientated: pastureland, arable farming land, etc. It is important that interconnections and the cause-effect relationships among the sub-areas are being analysed and documented.

Division into Land Unit

For the inventory of the natural potential of the planning area, areas

- of homogenous characteristics, i.e. land units, have to be identified and
- documented on a map. This is primarily a rough division of the planning
- area into units with similar topographical characteristics (e.g. plain, hilly, mountainous), edaphic characteristics (for example sandy soil, organic soil, cohesive soil, e.g. loam/clay, rocky/stony or mixed soils) and similar vegetation cover (e.g. denuded lands, open bushland, degraded forest, primary forest).
- An example of a possible procedure for a land unit diagnosis, planning and implementation within the framework of the LUP process, aimed at optimisation of land use, is presented in Appendix 5.

Identifying Agro-ecological Zones (AEZ)

The identification of agro-ecological zones is frequently applied in mountainous regions in which land use depends primarily on the elevation. For example, maize does not grow at the same elevation as potatoes. These AEZ form the basis for discussions on land use types in the area. For mountain farmers, the access to different elevations is part of an important survival strategy, especially where the statues of the traditional village organisations no longer guarantees an exchange of products. Before areas are subdivided into land units, the objective of the subdivision must be clarified: does it serve mainly for the analysis or also for planning?

The following units can be distinguished:

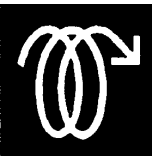
- planning units;
- land utilisation units;
- resources management units;
- units of rural development;
- units for protecting food sources;
- units for consolidating a social organisation.

For example, if units are identified for the purpose of planning, they must be reconsidered at the time the measures are going to

be implemented and have to be possibly "translated" into other units, e.g. land utilisation units.

Example Namibia

In **Namibia,** livestock owners traditionally migrate with their herds, depending on the availability of pastures. Due to the population growth and the limited access to water and pastureland, the possibilities of migrating are constantly decreasing. It is therefore an essential task to optimise the use of land resources within defined areas. On the other hand, the flexibility for animals to migrate in a variable climate should be maintained. Therefore, LUP in small planning units should always consider the creation of additional pastureland.



If in a land resources management project the diagnosis and planning unit is a watershed area, the question comes up of how to deal with those farmers who have plots of land in two neighbouring watershed areas. This must be considered when implementing measures. Measures taken on one plot of land always affect also the other plots and the activities of the farmer.

The various stakeholders are primarily responsible for the plan implementation in their living areas, i.e. their plots of land and pasture zones. For this reason, agro-ecological zones or units in diagnosis and planning are not automatically the management units during the implementation. For an arable farmer the management unit is primarily his plot of land. For the farmer in the mountains, there may be several plots of land at different elevations, for the mobile livestock owner it is his spacious grazing area, and for the community it is the entire community territory.

Land Law

During the implementation of LUP-measures, aspects of land law play a decisive role. Measures aiming at a change in rights of land use, their restriction or their improvement, involving investments (e.g. terraces, afforestation, etc.) can only be successful in a sustainable way when the land law creates the appropriate conditions. Male and female farmers will hardly undertake major investments for cultural-technical improvements if they do not own the land. The implementation of cultural-technical improvements, however, can also lead to the formulation of a legal land titles.

Topographical maps, aerial photographs and GIS in land use planning

For the diagnosis and planning, mapping is part of the procedure. The maps feature the land units area and compare the actual land use, potential land use, environmental conditions and conflict zones. These maps are an appropriate basis for the discussion of problems with the stakeholders. This applies both to maps produced by technical means and to those produced by the male and female farmers themselves.

Example of Cartographical Presentations

An important working approach to understanding spatial interrelations is to overlay thematic maps in order to develop zones for the specific strategies. Depending on the planning level, the scope of the data used and the number of maps to be produced on the same basis, digital (GIS) or participatory methods (participatory spatial zoning) can be used.

Within the framework of the discussion on land damage, related causes and possible rehabilitation measures should be looked for. In the process it must be clarified to what extent the damage was caused by a lack of appropriate knowledge in the production area, or unsolved or unsolvable conflicts, or by inadequate natural conditions (plots of land on infertile slopes).

As a next step, the agreed changes in land use and regulations can be presented and mapped. This can be visualised, at least in the case of resident arable farmers, and constitutes an important planning basis and later for the implementation.

Topographical Sets of Maps

Any topographical maps existing in the country of intervention are generally available to village participants to a limited extent only. In addition, they are very difficult for them to use. Abstract symbols are used, the maps do not provide any easy accessible points of orientation. The scale is often irrelevant for village land use planning. For the project staff the maps are valuable for locating the village, drawing up general maps and, in rare cases, for establishing and/or verifying boundaries. Beyond this, when enlarged they can be used as a basis for creating three-dimensional models of the terrain, since they reproduce the contour lines. These 3D-models, often used in projects working

in mountainous regions, were successful tools in planning discussions in which questions had to be clarified concerning watershed areas and the proportion of sloping land.

Photo 4: **3-D model as a tool in planning discussions, Thai-German Highland Development Programme (Thailand).**

Geographical Information Systems (GIS)

Computerised Geographical Information Systems (GIS) are often used to make data processing, storage and retrieval easier. Having a GIS, the prestige of the project increases. Finally, it depends on the participants during the in planning process if the GIS is used properly or if it is used at all. Purchasing and setting up a GIS is no essential prerequisite for LUP. It can only be considered after a careful evaluation of the real need. Above all, qualified staff is required to operate it; and, a considerable expenditure is needed for additional know-how, hardware, software and refurnishment of computer rooms.

Aerial Photographs

A well-proven technique in many projects is the evaluation of aerial photographs. After one or two days of introduction into the procedure how to read (not interpret) aerial photographs, village people can read them without difficulties. The recognition of orientation points (buildings, individual trees, sections of river, hills) makes everything much easier, it stimulates the process and is fun for all participants. Photographic techniques used nowadays make it possible to enlarge photos taken at a scale of 1:50,000 to the scales used in village LUP (1:5,000 to 1:25,000, and mostly 1:10,000 to 1:20,000, depending on the

need for detail and the intended planning) while receiving additional information at the same time. It is recommended for the purpose of reading photographs that the individual photos be pieced together to make photo mosaics which completely cover certain boundaries and/or the village planning area. It is important that a copy of this mosaic is kept in the village. This gives the village planning partners confirmation of their responsibility, and also leads to reinforcement, discussion and the formulation of ideas apart from planning meetings.

Photo 5: **Participatory air photo interpretation, Village Adi Baren, Rural Development Project Mai Aini (Eritrea).**

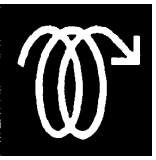
Terrain Walks

Aerial photographs are expensive. In Mali a new flying mission was undertaken in the year 1992. The costs per set of village boundaries of an average of 50 km² were DM 3,000 for the aerial photographic mosaics. It is therefore obvious that there are situations in which aerial photographs cannot be used for financial or for other reasons. In this case, topographical maps at scales, which are not excessive e.g. 1:50,000 are an alternative. On this basis, maps of landscape units, landscape damage and present land use can be drawn up by intensive terrain walks. These should be pre-planned transects and done in co-operation with the villagers who are familiar with the area. Even when aerial photographs are available, terrain walks are necessary, but they are aimed at the verification of the photographic elements concerning what they actually represent in the field (ground checking).

Technical Equipment Instruments and Aids

In order to draw up plans based on aerial photographs, a simple drawing is required including drawing boards, transparent drawing paper (for laying on top of the aerial photograph mosaic) and a dark marker. In order to make a quick calculation of the surface area, a planimeter of simple Planning design or a simple, transparent, squared sheet can be used. To calculate the slopes in the terrain, it is recommended to use a pocketsize clinometer (priced at less than DM 200) and to assess the pH-value of the soil, a galvanised, pocket-size pH-meter.

Local Tools and Planning Means



The use of technical instruments and planning aids such as GIS, remote sensing and maps, comes in addition to the strategies, instruments and planning tools used by the local population. The combined use of local and external processes and tools are not restricted to technical matters. It also covers procedures and techniques for solving conflicts, negotiation and decision-making. Land resources are being destroyed very fast. Therefore, the diverse tasks of land use planning in their national and local dimension, as well as modern technologies are becoming increasingly important. This does not imply that simple planning methods and self-help approaches as well as conflict-solving strategies are no more promoted. Integration of problem solving mechanisms with a complementary use of various instruments and planning tools is necessary, especially when the work is being carried out at various planning levels (e.g. village, district, region).

Presentation of the Results of Collection and Analysis of Data

After the analysis phase, the stakeholders have to reach binding agreements and decisions. Therefore, the results of the data analysis have to be presented in a way, which is understandable to everyone. Land maps, maps of environmental damage, maps depicting landscape units or agro-ecological zones, maps of present land use forms are an important basis for the discussion because they have a high visualisation content. This includes not only those maps produced by GIS specialists or cartographers, but also the maps prepared by the farmers themselves. It is also important that the participants should be able to identify themselves in the presentation. Other forms of presentation are tables, diagrams, pictures or texts. These must be also presented in a form, focussed on the stakeholders needs. The success of the presentation depends on how strong

stakeholders identify themselves with the discussion. If they are motivated to reflect and collaborate, the presentation makes decision-making and common agreements possible.

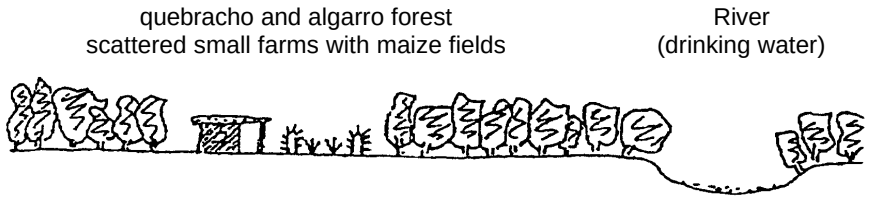
The guiding principle for the presentation is that the "how" is just as important as the "what". Not only the results are important, but also the ways and means by which they have been achieved. The methods and procedures to be applied affect the quality and sustainability of the decisions and results. In this instance, it means that the "how" of the presentation and the successive planning step are also important for the sustainability of the measures to be implemented.

Example: Argentina

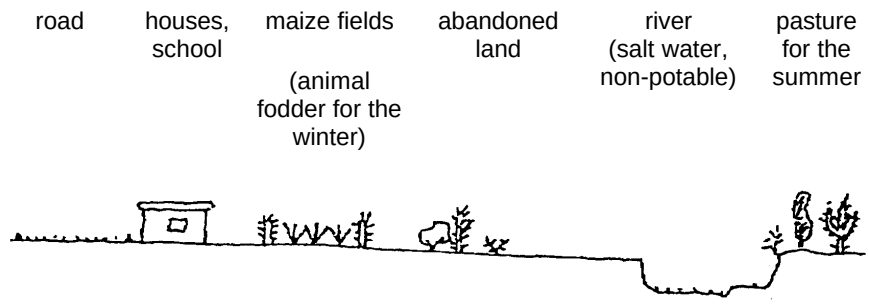
In the project **ILE Los Llanos in Rioja, Argentina** the following rules were applied for the presentation:

- use of local expressions and designations;
- reproduction of the content in simple expressions, and if needed added by diagrams or statistics easily to understand; and
- visualisation by people who also participated during the analysis process.

Changes in Land Use in Corral de Negro 100 Years Ago:



Today:



Development processes:

- felling trees to establish fields: The entire field is "cleared" and fenced by planting cacti to avoid animals from entering.
- felling trees for charcoal production: It started with the building of the railway (Dean Funes-Patquia 1891). For 50 years now there has been no forest no more to produce charcoal. The men have gone elsewhere to work as woodcutters.
- migration: Previously, the houses were scattered far and wide. About 40 years ago, many people moved to Olta, San Juan or Buenos Aires. Others moved to the new road leading from Olta to Chañar. Only about one third of the small farms from earlier days have remained. Land tenure is not regulated. There are conflicts.
- giving up fields: There are fields in which nothing has been cultivated for 40 years. These are bare areas. On some, also no grass will grow even when it rains.
- decreasing water quality in the river: The water depth in the riverbed in (dry) winters is only about 1-2 meters. Gradually, this water has become more and more salinated. Now, it is so bitter that it is of no use at all.
- in the village, the presentation got broad approval: "There you have it! That is our life!". It also stimulated further reports on experiences.

Capacity Building for Land Use Planning

Planning is not an end in itself and cannot be reduced to an administrative process. Most common motives for planning are of economic nature. Planning is an investment and is therefore carried out in order to achieve additional economic revenue. One of the aims of land use planning is to achieve an improvement in the economic viability in the planning region.

If a project intervenes in the field of LUP, it must answer the questions "How?, With whom?, For whom?, At what planning level?, Who is the partner?, and What agency is to be supported?"

Example:
Burkina Faso

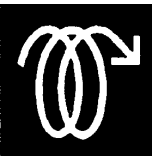
In the setting of the **PATECORE** project, the village is the planning unit and intervention level of the project. The objective of the intervention is to improve the management of natural resources in the area. In many cases, the decision-making power is not clarified at community level. The traditional authority (*Chef de Terre*) has lost many areas of decision-making (his mandate) on the use of land resources without new, functioning decision-makers being installed. The consequence is a power and decision-making vacuum which is only partially filled by the next decision-making level ("quartier" to the level of farm household/business) and especially not at all by a higher level. That means that the authority of the village community is dealing only with a few planning areas and related decision-making. There is no mandate for LUP, either from "below" (from the village community or the direct users) or from "above" (meaning a clear definition of rights and duties to plan the resources at village level by the state authorities).

Here, a field of work opens up which has to be dealt with in LUP at village level and which has got a very central role in the GTZ-approach: improving village organisations and decision-making structures. This includes: the definition of rights, responsibilities and duties of functionaries and groups as well as their representatives in the village, questions concerning participation in the planning and decision-making process (not in the sense of participation in the project, but participation by the stakeholders in planning for their village), establishing norms and rules for land resources use.

Decentralised proceedings in countries in which a decentralised development is already an implemented policy applies to structures with established responsibilities (mandates). The capacity of those structures is another question. In many countries, however, decentralisation, if it exists at all, is only an idea, and is neither planned nor implemented. Thus, there are no established mandates to be found, and in order to carry out participatory LUP in a useful way, these mandates must first of all be clarified. This is done within the framework of the appropriate institutional structures in the country of intervention.

Lack of Clear Structures

Often, projects start their work in the field of land resources management or rural regional development without clear institutional structures. Sometimes, sectoral organisations are in place, mostly at implementation level but not at planning level. Usually, projects have to support and carry out the development of their own organisational structures, which is a labour-intensive and time-consuming process. If the assignments of the project cannot be accomplished without an improved institutional basis, then this basis has to be promoted in first instance.



Institution-building can, however, also mean that the project promotes functioning inter-institutional linkages instead of concentrating all its efforts on one organisation only. This should be the aim when the organisation is large, bureaucratic and governmental-run, when it is inflexible to carry out new assignments in an efficient way. The effect of such an intervention covers by far the expenditures involved.

A project can concentrate first on creating the supporting planning agency, developing or empowering it, or on developing a constructive plan and initiating its implementation. So, precedents are going to be created, hoping the new situation will develop the appropriate institutional structures for planning.

Example: Tanzania

The Handeni Integrated Agroforestry Project (HIAP) in Tanzania supports an "Implementation Committee" at district level. It is composed of representatives of all relevant technical district authorities and guarantees an optimal use of the available capacities (personnel, transport and finances). At the same time, an intersectoral framework planning is carried out in order to evaluate the necessary land use projects at higher planning levels. The sectoral planning required for this purpose by district technical authorities is supported by HIAP and other German Technical Co-operation projects in the region (production of aerial photographs, mapping).

Planning agencies must meet the following minimum requirements:

- qualified personnel and equipment;
- -motivated and technically competent extension personnel;
- -long-term financial security.

On this basis, the following prerequisites can be created by project support:

- -the politically high importance of protection of land resources;
- -the possibility of legal validation for land use agreements and land use plans;
- -establishing a legal security with respect to land use, especially in the case of investments to improve land quality (e.g. through Technical Co-operation projects);
- -possibilities of creating or finding on jobs apart from agriculture;
- -integrating of LUP into existing planning hierarchies;
- -possibility of arranging the existence of investment budgets for implementing land use plans (government, donors, private sector, etc).

Organising the Stakeholder Groups

One prerequisite for the success of land use planning is to create conditions which promote the development of relations based on trust amongst all stakeholders. This includes openness, transparency, respect for taboos, a regular information flow, etc.

Measures aimed at Building up Trust

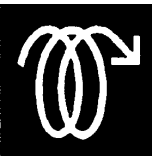
It tends to be the rule that rural areas initially regard any intervention (e.g. a project) cautiously and with distrust. In order to break the ice, projects have applied various "measures aimed at building up trust", with varying degrees of success.

These are often small, but social and/or economic support mechanisms. The implementation of these measures often extends to later planning phases. Measures aimed at building up trust target the village as a whole and cover particularly urgent basic needs (drinking water), economic constraints (transport facilities) or measures to avert off physical danger (stabilise a slope endangering the village). They should correspond to the project objective and concept.

Trust building measures should not be restricted to material incentives. Responsible behaviour cannot be bought: "The village will get a new well if in future the inhabitants stop clearing the forest". Trust can also be achieved and sustained by non-material support (e.g. legal advice, balancing of interests with authorities or large landowners).

Example
Namibia

A trip to Zimbabwe was organised for a group of 20 farmers and 10 project workers from **Namibia** in order to get familiar with the experience made there. Confronting land resources users having both success and problems, those people can build up trust, expand their knowledge and promote the readiness to change. Trust can also be created by offering training on the basis of analysing peoples needs. In this way, a technical training course can certainly lead to an improvement in pasture management.



Clarifying
Prerequisites

Measures in the form of economic support aimed at building up trust are discussed opposingly. If not carefully applied, trust can be destroyed rather than be built up. The following questions must be clarified before any decision is made:

- For which group or sub-group of stakeholders is the economic support going to be granted?
- What are the consequences for the development of a general trust if only one sub-group receives economic support?
- What is the effect of any economic support on the internal development of village organisations and/or existing conflicts within the village?
- According to which criteria is economic support provided? Who sets the criteria up? Are there limits with respect to the budget? What else can be suggested? Are there any exclusion criteria (e.g. no food aid)?
- Attention should be paid that the measures aimed at building trust are in line with the future working methods of the project. The style of co-operation between the project and the stakeholders is fixed already in the trust-building measures. The stakeholders in the village should do related work as expected in the future. Only those subsidies should be provided which the project can guarantee over a long period.

- Before deciding to promote a certain form of organisation at target group level, a project should carefully examine and consider the impact on other, existing organisational approaches.

Co-operation Agreements and "Rules of the Game"

Deficiencies of State Agencies

Projects of the Technical Co-operation are often confronted with similar deficiencies of government agencies: lack of co-ordination, insufficiently qualified staff, frequent staff changes, imbalance between assignments accepted and available capacities, and orientation towards completion rather than planning. The hierarchical structures contribute much to paralyse initiatives of the technical personnel. This leads to a conflict of objectives with the project. As there is often virtually no alternative to governmental agencies, projects have to deal with these conflicts of interest as well as to mediate between the agencies and the stakeholders. This task demands more than a technocratic understanding of roles only. It requires a constructive search for solutions to conflicts and to institutional problems which take into account the limited productivity of both the authorities and the other stakeholder groups. In this process, it makes little sense to promote organisations only through consultation as well as to transfer all burdens of problem-solving to the local stakeholders.

Linkage

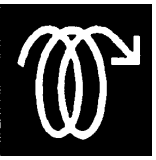
Instead of relying on one partner agency, the project should try to establish co-operative relations with all relevant interest groups within the planning framework. When implementing measures, the work allocated and agreed upon should be fixed and recorded in co-operation agreements. In this process, the principle applies gained from experience: "Plan together, but implement in sectors", at least with respect to the participation of the involved authorities. A broad linkage with all participants increases the chances of sustainability of the results.

Participatory planning processes are intended to enable the stakeholders to articulate and represent their interests. In addition, it gives them the capacity to organise themselves and to increase their self-confidence. The success of participatory LUP depends on a better organisation and clear decision-making mechanisms. The establishment of those mechanisms is often more complicated than expected.

Contents of a Land Use Plan

A land use plan should contain the following elements:

- clearly defined objectives of the measures to be implemented;
- description and presentation of the initial situation and its economic analysis (e.g. What is the extent of the long-term damage if there is no intervention?, How much can the damage be reduced? or What is the effect if the intervention does take place?);
- costs of the intervention;
- effect of the intervention;
- Who does what work? Who benefits of which use?
- overall responsibility for carrying out the measures
- Which authorities participate in what way during the implementation process?
- Which mechanisms are used if agreements are not fulfilled?
- agreed compensation for restrictions on land use.



Arrange Details Locally

When defining the measures, directives from the relevant plans and directives from superior decision-making levels directives must be taken into consideration. A land use plan can be drawn up on the basis of general agreements on land use, which have previously been agreed on with the village user groups concerned and the relevant institutions. These land use options reflect only what kinds of land use are currently inappropriate for the land units and need to be restricted. In the further process, it will not be planned to the last detail, since the participating technicians often cannot really advise. Which crops a land user cultivates in what rotation depends on several criteria. It is therefore sufficient to propose the land use options and leave it to the users to decide what option they chose. In individual cases, however, additional references and restrictions can be made, either in order to draw attention to special hazard factors (e.g. "... on condition that erosion prevention measures x are put in place at a distance of y meters") or to specific opportunities.

Photo 6: **Participatory implementation plans to improve land use practices, Sajama National Park, Buffer Zone Management Project for Protected Areas in Bolivia**

Time Frame and Process Character

It requires a great deal of time to draw up a land use plan which corresponds to the concept and to the criteria of these guidelines. It is certainly possible to draw up land use plans at village level within 3 months, but it can then be assumed with certainty that during the process the local population was not involved significantly. The structures of existing agencies, too, require time to these participatory processes. Experience has shown that under normal initial conditions, a period of 2 to 3 years is required before the first land use plans are available. This should be taken into consideration when estimating the timeframe for the orientation phase.

As in many other phases of the LUP process, when drawing up plans, it must be ensured that not only the content of the plan, but also its form reflects the collaboration process between the project and the local population. The process and the results (agreements) must be reflected in such a way that all participants can identify themselves with it. The plan drawn up is the result of a negotiation process which is transparent to all. Such transparency is also possible when using remote sensing and GIS. The plan to be implemented contains only those measures whose implementation was agreed upon. LUP is a learning process and can be extended, amended and evaluated within a fixed timeframe.

Technical Criteria for Assessing Land Use Options and Interventions

Almost every change in land use requires the additional use of labour and finances. This represents an investment in the future and therefore the economic value must be estimated before the decision is made to implement the plan. In addition, the social and political context must be considered.

Before the final decision is made on a land use plan a checking should be made using the following criteria:

List of Questions for Considering and Checking for using LUP

1. Who are the target groups of the intervention?
2. Which immediate constraints or basic needs of the target group are to be tackled by the intervention?
3. Which assumptions or general conditions must be fulfilled before the intervention is implemented?
4. Which constraints could hamper the purpose of the intervention?
5. Who will be responsible for the management in the future (use/care/operation/maintenance)?
6. What contributions are expected from the beneficiaries for
   (a) the establishment (construction, installation, planting, etc)?
   (b) maintenance?
7. Is the intended intervention contrary to or in harmony with other interventions in the region?
8. In what way should the target groups be prepared in order to ensure the sustainability (conservation/operation/care, etc) of the intervention?
9. Which future and running costs can be expected ?
10. Who will bear these costs?
11. Which group(s) will be disadvantaged due to the intervention?
12. What percentage of women participate in comparison to men?
13. Does any local knowledge of land management and land use related to the intervention already exist?
14. What priority does the intervention have as far as the target population is concerned?
15. What is the technological level of the proposed intervention? Can this be justified or maintained in the local context?

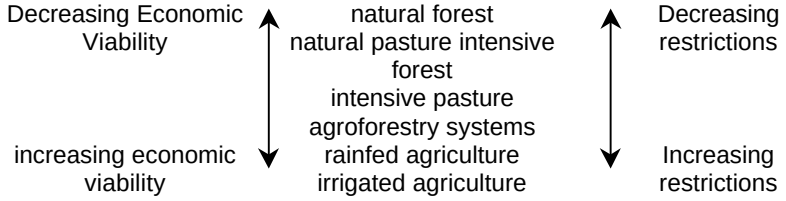
16. What status of organisation of the stakeholder groups is necessary in order to make the best use of the intervention?
17. Who is responsible for the further management of the intervention and who will record the quality of it ?
18. Who is intended to be the contact partner for the target group in case of potential corrections or modifications?
19. What is the expected cost-benefit-ratio which should be achieved within the intervention? (Establish time frames individually).
20. How will the re-financing or timely renewal/repair of the intervention be organised?

Area related Criteria

The allocation of parts of the village area to certain land use options is made according to their land use potential. In addition socio-economic, socio-cultural and logistical aspects and the need to meet the demand for raw materials have to be considered.

Land use options have various requirements and, therefore, restrictions with respect to their implementation. The following sequence could act initially as a rough guide:

Overview 3 Example for a Tentative Sequence of Land Use Options

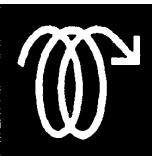


The land use options "built-up areas" (settlements, industry, roads) and the options "conservation areas" and "buffer zones" will not be discussed at this point, as they are determined externally. In addition, they are orientated on criteria (e.g. biodiversity) applied independently of location claims and of land use requirements.

The overview above represents potential land use options. In order to propose those for a allocation, restrictions must be evaluated individually on site and brought into relation with the major socio-economic and technical criteria (see Appendix 8).

This procedure leads to various land use options in the sequence of their economic profitability. In situations of high

pressure on land resources by the population, it is also a useful identification scheme. The sequence presented can vary from location to location, e.g. intensive pasture land can, in individual cases, be placed higher on the economic scale than rainfed agriculture. Also, additional land use options can emerge and others can no longer appear. If there are land reserves, which cannot or should not be planned directly, it is possible to implement or maintain an ecologically stable option. In such a case, it is appropriate to maintain a natural forest, even if the land use potential would promote the option "irrigated agriculture". Simultaneously, an option can be implemented even in a location with a higher potential without having a destabilising effect. To implement an option in a location with a lower potential requires considerable technical and financial expense.



It is obvious that the many intermediary forms of cultivation or land use are placed somewhere "between" the land use options described; some also require quite specific general conditions with respect to the location and socio-economic aspects. This applies to forest pasture, shifting cultivation with long fallow periods within a rotation system, plantations with very intensive cultivations and special crops.

Overused Areas

It has been stressed repeatedly that mapping and planning must cover the entire area. However, often there are some areas located far from the village which are not considered. Experience has shown, these areas are often extensively used, eroded bushland or hillsides frequently destroyed by fire and, in the understanding of the village inhabitants "not really usable". These are mostly governmental or communal land but also private land, which has been left open.

Land use planning should also deal with those areas if the objective of the plan is not only to meet the immediate needs. Land of this quality has been, in the course of time, degraded from intact (natural forest) to its present status, by long-term use in the sense of overuse. Land titles or rights are either not given to individual farmers, or there was sufficient land available to clear and cultivate new plots elsewhere. Thus in the past, degraded land fulfilled an economic function. It is therefore also important to prevent a further degradation by stabilising these areas. A suitable means for achieving this is to reforest these areas by direct seeding, and protecting the area temporarily before grazing.

Social and Formal-organisational Criteria

In this context attention should be paid to criteria such as the short-term economic use for poor parts of the population, the marketability of the products, the cultural suitability of proposed technologies, the conflict potential of measures, the possibility of financing measures and ways of empowering the stakeholders, their potential for self-help and their capacity for co-operation.

Presentation of the Plan

How a land use plan is to be presented depends on various questions:

- To whom will the plan be presented (to an authority, a ministry, a neighbouring village, a financing institution)?
- What is the purpose of the presentation (financial means for the implementation, political influence/conviction, legal amendments, motivation for others as a pilot case, further education)?
- Who will present the plan (representatives of the target group, a local female politician, the mayor, an extensionist)?
- How will the plan be presented (verbally, with visual tools or in writing)?

Maps

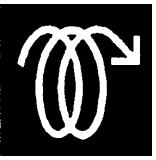
The plan is presented using maps (at a pre-determined scale), tables and text. The cartographical part can consist of several parts:

1. base map;
2 land units;
3 map on environmental damage;
4 map on present land use;
5 map on agreed favoured land use based on land units;
6 land use plan (proposed land use).

Accompanying Documents

The maps in points 2. to 5. are also to be accompanied by explanatory tables. The land use plan (map 6) requires an accompanying note, which goes beyond table form. It includes a detailed description of the intended land use and gives alternative options which should remain within the framework of the agreements depicted in map 5, as long as not investments (e.g. terracing slopes) could allow a change. This must be documented.

Within the intended land use option, the nature and extent of the intended changes, as well as the costs involved, must be listed in the accompanying document. These changes arise from the differences between map 4 Present land use" and map 6 "Land use plan", and resulting technical and/or organisational interventions as well as from the related expense for labour and other financial needs. These changes are listed for all partial areas, the costs are added to give the total amount, which will be required to implement the land use plan for a certain village or area.



Overview 4 Example of an Intervention and Expense Documentation for a Land Use Plan

	Land Unit 1	Land Unit 2	Land Unit 3
Present land use	**natural pasture**	**natural pasture**	**rainfed agriculture**
Intended land use	intensive forest	intensive forest	irrigated agriculture
rough description of intervention	planting work year 1 = 100% year 2 = 20% local fencing	seeding of fodder plants xy in rows5 m apart; planting of 600 fodder bushes yz per hectare; local fencing	construction of a water pipe at river xy; construction of a channel1.2 km long; and of distributors fine levelling of areas
labour requirement per ha in MM (Man Month)	1.3	1.1	2.6
financial requirements per ha in local currency	2,100	1,650	2,400
size of the partial area	28 ha	127 ha	8.5 ha
total labour requirement in MM	36.4	139.7	22.1
total financial requirement in local currency	58,800	209,550	20,400

The Negotiating Process

3.6 Negotiation and Decision Making

The preparation for carrying out the interventions identified in the LUP process begin already at a early stage. All participating organisations in the planning region as well as interest groups in the population are included in the process from the very beginning. This gives them the chance during the negotiating process to clearly define their role during the implementation.

Negotiating is a continuos process during the entire project period. It begins already with the process of finding and evaluating projects. Once the project is installed, a new stage of negotiating begins on the basis of co-operation with the relevant agencies and beneficiary groups. Additional groups have to be involved when identified as relevant. Planning is therefore always the result of a negotiating process in which different stakeholders participate.

Negotiating processes do not always take place at the same time with all stakeholders. They are arranged between the project and the beneficiaries, between the beneficiary groups and the authorities, and also between the project and the local elite or NGO. Usually, no decisions are made during these preliminary negotiations, but stakes and interests get clarified. Subjects are discussed and debated, and possible measures are proposed for the later plan.

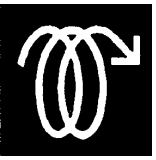
Example: Procedure for Negotiating A Plan

Decisions on what is to be provided for a preliminary land use plan are taken in a forum in which all those who will participate in the planning process are present. First of all, a draft is drawn up with the direct stakeholders using the land in the planning area, and negotiating takes place amongst them. This initial plan is discussed as an initial suggestion with the local institutions and can be modified if necessary. After this, discussions take place with the local political elite and the private sector which will be affected (credit institutes, marketing structures, the processing industry, etc.). Only when the financial support has been clarified, the relevant government agency can approve the draft. Depending on the local situation, the character of those processes can vary.

It will emerge from the co-operation with the beneficiaries and the partner agency who is actually to be involved in this negotiation and planning process. The principle thereby applies that each governmental and non-governmental partner level (administrative level) is to be included if it is affected by the solution to a problem or if it is required for this purpose.

Role of the project and demands on the project in the negotiation process

In order to initiate and facilitate negotiation processes, the project needs male and female employees with appropriate communication skills. This includes the ability to listen and to observe. There is a need to learn and to see, to observe, to interpret and to understand things. This is a condition for the ability to understand and respect different viewpoints, problem-solving strategies which may be new to the project staff, and the local population. Only with this basic attitude, the process of co-operation can be initiated as a real partnership.



"Understanding" co-operation between the project and the population allows project employees to recognise that during the planning process to improve land use, different criteria are applied, depending on the stakeholder group. These criteria are not only of technical nature. While in smallholder farming families, the survival strategy is determining, the local elite aims at maintaining their privileges.

In this process, the project should avoid to be involved into local power struggles. It should neither take the position of groups claiming the "only correct" use of land resources, nor should it claim itself to have the "only correct" definition. If a project focuses on one way only, it can turn out to be the end. There is not one solution or one way only. A project certainly should not try to convince the partner groups with missionary enthusiasm. Adequate strategies and forms of sustainable land use, as well as appropriate rules in conflicts should be worked out together. Here, the project plays the roles of a catalyst, moderator and mediator.

Example: Paraguay

A project in **Paraguay** reports on the consequences of a lack of participation: "Planning must be made together with the users. And it should follow initially the thinking of the farmers. Although the farmers had participated in all steps, and their opinion was heard and taken into consideration, we proceeded with concepts and tools which were foreign to the farmers. In order to carry out planning together with the farmers, you must get to know and understand their strategies and planning. The farmers plan land use according to many more criteria. There are not only soil types and climatic cycles which play a role, but also, the availability of family labour, marketing opportunities, access to roads, food security, long-term economic stability, title deeds, and other aspects."

The obligatory nature of decisions in land use plans

The implementation of a land use plan does not happen on its own, neither is it done voluntarily by all stakeholders involved. Considerations and agreements on the implementation strategy are also part of the plan. The mechanisms needed to define the obligatory nature should therefore be clarified and agreed on at the earliest stage in drawing up the plan. However, the obligatory nature can only be applied if appropriate measures have been agreed upon before counterbalancing any restrictions on land use for certain stakeholders, e.g. in the form of land replacement or compensation.

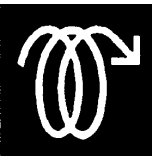
The use of existing, or the creation of new legal rules, in order to enforce agreements should be avoided as far as possible. Generally, motivated land users are capable to take action themselves against infringements of the rules. On the other hand, there must exist a legal framework for dealing with infringements of the rules. This serves both to support and protect those adhering to the contract as well as to sanction those violating the contract.

At village level there are ways and means to take action against people who infringe on internal village regulations. The regulations involve social pressure, but can also mean imposing penalties. In order to avoid any irregularities or even excesses

enforcing internal village regulations, government authorities often have the right of approval or the right for checks.

Example: India

In many parts of India, cattle pounds are operated. These are guarded and fenced cattle enclosures where animals caught in places where grazing is not allowed, are kept. The owners of these animals may have their animals released against a fixed payment or they may accept that the animals will be sold at a public auction on a fixed day. A very similar institution is the *fourrière villageoise* in a number of West African Sahel countries.



In cases of the infringement of the agreed land use regulations, the project agency can announce that the co-operation contract between the project agency and the village is to be terminated. In order that the termination of the contract does not remain an empty threat, the procedure is recommended in which the project and the relevant village perform their obligations "tit for tat". Since in this way none of the parties enters into excessive advance concessions without counter-concessions, it is possible to withdraw from the co-operation at any time without a too great loss.

Also authorities can infringe on land use rules in the area around the project or the planning area. For such cases mechanisms should also be clarified and agreed on. An example often quoted is the practice of granting tree-felling concessions to outside companies. For those locations the usage was already agreed with the local land users only, and no provision was given to outside companies. This problem can only be solved in co-operation with the forestry authority concerned, which is in any case involved in the drawing up the land use plan. However, the more advanced the decentralisation and the more rights and power the community authorities have, the stronger is the negotiating and/or planning position of the land users in such processes.

Decision-Making and Conflict Management

Since land users are often competing for land resources, conflicts can jeopardise the success of planning. Projects are thereby directly confronted with the problems related to conflict management. The question to what extent projects should engage in this field, and with what success, is discussed

comprehensively and is considered to be controversial. It is important to mention that conflict management is not a panacea, and no results should be accepted which no project can produce.

Conflicts

There are conflicts, which blow the time horizon or the frame of a project. Examples are the generation problem when introducing new cultivation systems or carrying out agricultural reforms. In practice, it is recommended that a differentiation be made between "hot" and "cold" conflicts. "Cold" conflicts can literally leave a project cold. Although they are latent, they hardly have any effect on the planning process. But there are "hot" conflicts, there is a need for action, since there is a potential that *parties* will refuse to co-operate. This will jeopardise the success of the planning. The type of conflict will therefore determine the approach. The decision for or against a certain procedure must be adapted to the local methods of settling conflicts.

The project should clearly define its role as a neutral mediator being aware of the consequences. If it appears as "the attorney of the poor and disadvantaged", it is possible that it will not be accepted as a neutral party by the influential, large landowners. Also these influential groups must also be integrated in the process of land use planning. A dialogue must be initiated with them and maintained in order to achieve a sustainable planning success. Therefore solutions must be found which will provide advantages for both groups of participants, the better off and the disadvantaged.

At the same time, an important function of the project is to empower the disadvantaged groups. This can even be achieved by explicitly inviting landless people or women to attend meetings. By using participatory methods, it is ensured that their interests are at least heard and discussed.

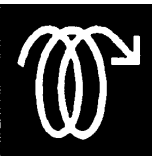
Role of the Project

If a project decides to actively contribute to the settlement of a conflict, depending on the situation, it takes on the role as initiator (initiating discussions, round table meetings or bringing in a mediator) or as mediator (mediating between the parties involved in the conflict). In order to develop a strategy for settling the conflict, precise knowledge of its history is required, differing viewpoints of the parties must be recognised and the rules of the game have to be fixed. How did the parties deal with the conflict previously? Does the law of power or of majority apply? Is there an arbitrator, a local authority, which deals with land use conflicts? What would happen if the participants were

not willing to reach a settlement of the conflict through negotiation?

Procedure

Before a project proposes negotiations to settle a conflict; it should be ensured that the participants are willing to take part in such negotiations. It will emerge from the previous co-operation between stakeholder groups and supporting agencies which groups and institutions will be involved in the negotiation and planning process. In any case, the following parties should be included:



- those who are directly or indirectly affected,
- those who are responsible,
- those who competent,
- those who can support or motivate, and
- those who will impede the process if they are not included.

During the negotiation process the interests of all participants will be analysed jointly and in detail. Emerging from this, it will appear who needs whom to achieve his or her interests, who has common interests as well as who has competing interests, and where do potentials for co-operation arise. It is already an important result for all participants to present and defend their interests. Direct discussions create more understanding and make the process of agreement easier.

It may make sense temporarily to negotiate with the parties involved in the conflict separately as long as they agree to this and transparency is ensured. In difficult cases of conflict, which might paralyse the land use planning process, it may be helpful initially to agree at the least common denominator. Any remaining fields of conflict will be kept open and clarified in subsequent negotiations. Conflicts are dynamic, and positions and alliances might change.

Generally, the parties participating in a conflict-solving exercise represent a certain way of solving it in the discussions, which they have previously agreed upon. However, in order to search jointly for ways to solve the conflict, which would take into account the interests of all parties, it is helpful to engage neutral moderators. They are not supposed to represent any interests and must be accepted by all groups. They should be familiar with the ruling power structures in the area and be able to deal with them. Moderators make sure that the discussion is fair and enables the participating groups to find solutions, which

are acceptable to everyone. These should be formulated as a feasible result and documented (in writing). This will also enable outsiders to reconcile and reconstruct the negotiation process.

Information

Negotiations are difficult if the status of information of the participants is not even or insufficient. Independently, the set-up and course of the decision-making process, it is also important that the flow of information and the transparency are guaranteed. This can be supported by media work, minutes of meetings, informative meetings, blackboards, etc. Informative visits in communities, which have similar problems or have already found solutions can be helpful. Theatre shows or role-plays can reduce tension or lay conflicts open and have proved to be effective in many projects.

Dealing with the Ruling Power Structures

Negotiation and decision-making processes are determined by social rank and power. In the context of the development policy guidelines of the Federal Government of Germany, a project should support those who, due to their social rank, are less able or not at all able to express themselves and represent nor enforce their interests in the decision-making process.

Dilemma

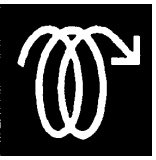
In practice, this demand is a dilemma for the projects. On the one hand, participatory procedures are intended, if possible, to give all involved groups the chance to express their interests and to negotiate. The project should take on a "neutral" role as moderator or catalyst. On the other hand, power imbalances should be changed. The side of the disadvantaged groups is taken if, despite a formal process of participation, the ruling power constellations lead to results and decisions, which are not in line with criteria of the development policy. This applies when, for example, traditional rights of use by women are restricted without compensation measures, while actually women are the prior target group in development politics. A project will therefore have to ensure to permanently fulfil the directives of the development policy. In addition, it will also follow the role as mediator or moderator.

If in the given framework of general conditions, it is impossible for disadvantaged groups to express their interests, the project will search for mechanisms to solve this problem, e.g. if it is not possible for women to express their interests in a village as in the example mentioned above and to demand their rights of use, a separate discussion can be held with the women

only before the meeting. Is should be someone chosen to present the results.

Conflicts

Therefore it is possible that the project creates conflicts or makes them visible. For example, when women demand more rights of use *versus* the head of the family, young people *versus* the elders, or tenants *versus* a large landowner. Also if it is not the objective of LUP to change the ruling land tenure, this topic can become the central topic of problem analysis within the framework of participatory planning. If participation is taken seriously, contents are not fixed, and burning issues cannot be ignored.



The project should be clear about the fact that dealing with such conflicts can have negative or even dangerous consequences for the weaker parties involved. Improving the capacity of disadvantaged groups to express themselves and backing them up can also have the effect of disturbing the entire social structure in a traditional society. This is the case if old codes of behaviour are abolished before new ones have become established.

3.7 Evaluation and Actualisation of Plans

After a certain time, it becomes necessary to actualise a plan because the general conditions and interests have changed. Another reason can be the experience with the implementation of the previous plan. Information on the general conditions and changed interests, as well as an evaluation of experience with the previous implementation (M&E) constitute an important basis for actualising a plan.

The various parts of the land use plans have different degrees of detail, obligations, time horizons and a different nature of the process. In the preliminary plan, proposed land use in a landscape unit has been laid down as optimal use with a high degree of obligation, with a low degree of detail and a longer time horizon. The subsequent land use plan is a differentiated and detailed definition of the land use, which is tailor-made for the present wishes of the land users concerned, and refers to their sub-units or plots and covers a relatively short period of time (3 to 4 years).

In order to progressively update the plan, a considerable input of time and attendance by all participants in the planning and implementation process is required. Endless meetings quickly stress in particular farmer groups and lead to a demotivation. In

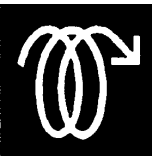
addition, the land use plan should receive all the "official" approvals, a process, which cannot be repeated continuously. Also, a plan which is changed frequently is often not of good quality in the opinion of the participating farmer groups. But it is a patchwork, which leads to a loss of credibility. Continuous planning in a team of technicians or managers is somewhat different from planning in a village.

Time Period For Updating the Plan

It is therefore recommended that the land use plan is only to be updated after a certain period of time but within the fixed limits, i.e. every 3 to 4 years. In the meantime it has to be verified whether changes in land use are being made within acceptable limits. If there are cases of "destabilising" land use being introduced without permission, they are to be treated as an "infringement". An appropriate mechanism of licensing and supervision must be established at village level and a regular check made to ensure that it is functioning accordingly. An appropriate village structure should be promoted.

Budget Planning

A change in the land use plan also requires a revision of the cost of the implementation (finances and labour). Generally, the expenses are to be planned well in advance and kept within a limited budget. The project has two options for the plan implementation. 1) It can decide to advise the village of an upper limit of available finances within all technical interventions should be covered. It therefore also represents the volume of financial investments for land improvement measures, including new proposals. 2) Additional finances can be found either through the land users themselves or through additional governmental or international funding, which then enter as a contractual component for a partial implementation of the plan.



4 Participation in the Planning Process

Participation in LUP covers communication and co-operation of all involved participants. The objective is to increase the planning competence, the self-responsibility and organisational capacity of disadvantaged target groups. The entry point for this approach is the fact that conventional (top-down) planning approaches have had very little success. Existing deficits should be balanced out by a more intensive dialogue and an improved co-ordination. This also requires a change in thinking of the project collaborators, government services and participating NGOs, i.e. changes in the conception of their position and their role in the participation process.

A precondition for realistic planning is the clarity about the roles of the different participants related to the use of land resources, about their social positions, ranks and interests. A detailed analysis of these conditions identifies competitive relationships, the potential for conflicts and common interests. This can open ways to planning based on consensus. A conflicts solving strategy is also respecting different perspectives. The success of planning is at risk if socially disadvantaged groups or those not present at the time of planning are excluded. Special reference is made to the need to take into consideration the gender roles of men and women in land use planning. The gender role has a considerable effect on the access to land resources, on the room of action and the opportunity to express viewpoints.

The explanation of the tools for participatory planning will be restricted here to the basic principles and to the diversity of the approaches. When using participatory planning methods as well as selecting institutionalised forms of participation, one aspect has to be focussed on: the participants should learn together,

especially when target groups and government authorities collaborate.

4.1 What is to be Understood by Participation in Land Use Planning?

Participation is an interactive and co-operative process of analysing, planning and decision-making in which all relevant groups and organisations stakeholders -take part. It is a process "...which allows all participants to formulate their interests and objectives in a dialogue, which leads to decisions and activities in harmony with each other, whereby the aims and interests of other participating groups are taken into account as far as possible" (GTZ/Rauch, 1993, p. 16). Within the framework of these guidelines, this definition is extended in the sense that also disadvantaged groups participate in the land use planning and decision-making process. The aim is that these groups increase their competence in planning and implementation, their self-responsibility and autonomy in decision-making, as well as their organisational capacities.

Such an interpretation of participation demands a change in the self-understanding of the role of the project, the technical services, the non-governmental organisations (NGO) and of government representatives in the participation process. This form of planning emphasises the joint learning by and with the local population. It requires their capacity and willingness to take part in the dialogue. The usual cascade principle transfers hierarchically important knowledge. It has been practised until now by technical advisors and should be changed completely. The contribution by the population to decisions made during the conception, planning and implementation process must be respected as being of equal value.

There are not only the partner and the target group, which should change their thinking and go through the learning process, but also advisors should enter it. Above all, one has to be careful with too quickly made technical proposals. An attitude has to be adopted, which allows to understand the problem-solving strategies, capacities and the potentials of the local population. Only with this basic attitude a dialogue can be initiated.

4.2 What Results are Expected from Participation?

Outcomes

The results of previous planning in the field of land use and land resources management are considered as poor. The following reasons are listed:

- the unsuitability of top-down planning approaches and the related deprivation of the right of decision of local people due to a paternalistic approach to development;
- the lack of communication and co-ordination between sectoral authorities regarding to the sustainable use of land and other natural resources;
- the low level of competence and capacity of government authorities at local level;
- closely related to this are the deficiencies of the government in legitimisation planning and the increasing distrust between population and authorities;
- the fact that the traditional power structure is (under certain circumstances) being questioned;
- experiences and methods related to conflicts in land use planning are still relatively recent;
- controversial rights of use of natural resources. A frequent result of governmental modernisation and social change is the weakening of traditional institutions and indigenous mechanisms of regulation in land resources management. Among other things, conflicts arise due to the overlap of traditional regulations with modern government jurisdiction (government versus local regulations on land use).

Expectations

The approach in land use planning as promoted by GTZ is a participatory learning process based on dialogue developed as a response to the lack of institutionalised mechanisms of co-ordination and planning at local level. This applies above all to land use planning at community level. In most developing countries, communities are generally not sufficiently equipped, neither with legal and technical competence, nor with the necessary financial resources. Especially in Latin America, they often occupy themselves with purely urban concerns. On the other hand, it is the community level at which a reconciliation of interests takes place and where adherence to agreed regulations can be enforced.

Taking into consideration the character and political mandate a local government should have, the community is the only suitable authority at local level. Improvements are expected by the active participation of the population and/or of individual stakeholder groups.

Quality of planning

- Only those subjects are to be planned which the population can achieve;
- modern technical know-how, indigenous knowledge and specific local knowledge are linked in planning;
- the starting point is the way in which the different local groups see their problems and their initiative to analyse problems, to plan, to make decisions and to implement;
- by applying the principle of co-operation in LUP, competing or poorly co-ordinated sectoral planning approaches and levels of responsibility converge.
- All those concerned are participating in community planning and decision-making within the framework of the organisational development of communities. Simultaneously, participation gives the representatives of local groups an insight into the institutional "rules of the game". They learn how to better represent their own interests or the village interests to others. In addition, local groups are more capable to demand rights and actions from the government.
- Sharing of social responsibility in utilisation and conservation of natural resources at local level based on the principle of subsidarity is introduced step by step. This releases the government from administrative, social and economic transfer actions.
- Structures are developed for comprehensive, self-determined community and village long-term development, which is a solid basis for decentralisation measures.

Further important aspects are:

- the learning process of all participants due to the heterogeneous composition of the groups participating in LUP;

- all participants are better informed;
- the local population is more willing to accept and can better identify themselves with the activities;
- an improved relationship between population and administration leads to more binding agreements and sustainability in planning;
- The fact that the participating groups involved are encouraged to represent their interests, to express themselves, their organisation and self-determination, and in their co-ordination and planning processes, leads to an increased capacity to negotiate planning objectives;
- The development of co-operation and communication structures and the capacity of local institutions to implement plans.

4.3 Stakeholders in the Land Use Planning Process and their Interests

Who participates in Land Use Planning?

The potential participants in LUP are all groups which

- are affected by decisions on land use in a planning area;
- are interested in the results;
- are involved in a land use conflict (even in the widest sense);
- have a considerable influence on it or;
- are affected by its outcome.

Participation by the groups concerned does not mean that they are always physically present during the planning process. However, it must be guaranteed that they are at least represented by a delegation or by other binding forms of communication.

Many projects have been unable to realise the goal of a socially accepted and sustainable use of land resources because relevant groups and/or their interests have been ignored. Users and user groups in a planning area have varying relations with other actors, even outside the planning area. These stakeholder groups affect each other. This is because:

- The use of natural resources by one group has ecological effects on the use by or quality of life of another group, e.g. in watershed areas, drinking water production or irrigation systems can be damaged in settlements downstream due to

destructive arable farming practices on steep slopes upstream;

- Economic exchange relations are often very tense, and there are relations of dependence and competition. This can be the case between resident farmers and nomadic livestock owners, between tea planting or tobacco companies and rural seasonal workers or between timber companies and forest farmers;
- A complex social and political network of relations link the individual groups. An example is the relation between landless people, tenants and large landowners, complex "patron-client -relations, or the influence which powerful parties and government organisations have on the rural communities.

What criteria are applied in the detailed analysis of social groups?

Due to the diverse and complex relationships, it is necessary to have a differentiated description and analysis of the groups involved. This is only possible when they are directly involved in this analysis. The characteristics used to differentiate between the groups are: the role in the use of resources and the position in the rural society. In this process, the stakeholders can be differentiated as follows:

- according to the nature of the **use of land resources**: direct and indirect users; by (long-distance) effects of other users/affected parties, permanent and seasonal users, arable farmers and livestock owners, forest farmers and collectors.
- according to the **access to land resources**; landowners, tenants, landless people, local habitual users, illegal users, men and women.
- according to the **principles of relationships** and to the **social position**: ethnic, family, clan and customer relations; business and political relations; membership of the government administration, parties or local elite; large companies, large landowners; smallholder farmers, agricultural workers, exploiters and the people being exploited, rich, poor and marginalised, advantaged and disadvantaged groups, casts, religious groups or age groups, men and women.
- based on their capacity as **target groups** of the project;

- based on their capacity as **participants, without direct reference** to the area (not working in situ): landowners or concessionaires; social, economic, political or professional groups, such as e.g. groups of livestock owners, authorities for the overall planning and the sectors, partner agencies, Technical Co-operation / Development Co-operation organisations, NGOs; associations and external interest groups such as churches, parties, national and international conservation organisations, guerrillas and the military.

Which various interests, attitudes, values and positions are to be considered?

Based on the fact that land use planning is a process of communication and co-operation, the analysis of group interests related to land resources is required. As a result of an analysis of interests of participating groups, the following should be identified: the degree to which the various interests are organised, the capacity of the groups to express their interests, shared interests, and co-operative as well as competitive relations. In this way, potential sources of conflict become visible, as well as possibilities for consensus. Reasons for conflicts become just as clear as group specific options for resolving them. In this context, it is important to distinguish between interests and positions. Positions are expressed due to social and economic considerations or traditions, but they are taken due to hidden interests . It is easier to negociate on interests than on positions as the it opens up options or alternatives.

A group can only participate appropriately in planning if it has a clear idea about its own points of view as well as attitudes and value, perceptions and expectations, as well as those of other groups.

How can consensus be found in a conflict situation?

Open Dispute/ Discussions

In LUP processes, in which conflicts are to be solved, the task of finding a consensus is a focal point. This should, however, not lead to the temptation of "harmonising" differences in interests and perspectives of heterogeneous groups as quickly as possible, or homogenising them in general categories of groups (e.g. in the "village community" or the average farmer *)*. Nevertheless, it is of great value for negotiated solutions if the groups can clearly formulate their perceptions of the problem

and their interests as well as the self-defined role of their group. Respecting different perspectives of action, at the same time promoting the open debate among the groups about their varying values and opinions can be a sound basis for successful conflict management.

Non-identification of Stakeholders

The scope of interactive tools for analysing stakeholders, their interests and conflicts, is limited because of the complex social relations. For example, when groups are not included in an analysis of stakeholders and therefore they remain excluded from any support. The causes can be diverse. Due to the fixed location when planning land use, users who are not always present - be it for reasons of temporary absence (seasonal users), due to physical distance (e.g. those living downstream) - are often not part of the planning process and are therefore not identified as stakeholders.

Exclusion

Within the framework of village LUP it is not rare that dominating groups try to exclude competing users by not talking about their existence. Groups which are poor at expressing themselves are excluded socially or internally from taking their share of an offer of support. Those affected by this may be groups outside the village, such as hunters, wood collectors, charcoal-burners or nomadic cattlemen. It can, however, also apply to socially weak groups within a community, such as women, old people, landless people or ethnic minorities.

Therefore the identification of the relevant groups and their interests is often a painstaking and time-consuming process which is not finished with the analysis of participants in the initial stage of the planning process. If this analysis is wrong or too brief, measures, which have already been planned, can easily become worthless. Identifying the stakeholders and recognising their interests - especially in interaction with them - can and should extend throughout the entire planning process. The analysis of the stakeholders is socially and politically a delicate tool. Suspicions of social espionage are not rare. There is always a danger that differentiated information on groups or individuals might be misused, for political purposes. This demands of the project to deal very carefully and confidentially with this knowledge.

Participatory Process and Tools

Only a few, brief references will be made to the use of participatory processes and tools in land use planning. In all planning phases of LUP, many methods and tools of participatory collection and planning are applied which are already well-known from other fields of Technical Co-operation[1].

A certain "hit list" of favourite participatory methods has emerged in land use planning. These instruments, most of which originate from the field of RRA/PRA and PAR, were originally used in data collection and problem analysis.

A tendency is currently being observed for them to be used increasingly in the phases of actual planning and decision-making, or called upon them to settle conflicts between different groups.

Some basic requirements in the utilisation of these methods and techniques are to be emphasised:

- The starting point for all action is the specific understanding of the problem and the interest by the stakeholders involved;
- Planning covers also joint learning by external project workers and government services of and with the local population;
- The tools are not used as a rigid pattern, but adapted to suit local communication traditions and resources;
- The principle of visualisation is important (maps and aerial photographs; three-dimensional models, diagrams, or comics). This enables all participants, even those belonging to different language groups and also illiterate people, to follow and comment on the planning steps;
- The planning steps are carried out as far as possible by the affected groups themselves, and the project or government

[1] Special reference is made to the work of Michael SCHÖNHUTH and Uwe KIEVELITZ (1993), from which large parts have been adopted in this work. The authors deliver a user-friendly introduction to participatory appraisal and planning methods which is of great value to interested (land use) planners. Furthermore, the book contains a detailed bibliography and references to organizations, which have for many years examined participatory methodologies, or which offer training courses.

services restrict themselves to the function of a catalyst and, if need, moderator[2].

When carrying out the steps in land use planning concerning areas or land resources, terrain or transect walks by residents and external people, cartographic tools such as aerial photographs, self-made maps and three-dimensional models have proved being very successful. They play an important role in surveys, the problem analysis, the evaluation of the suitability of land, the identification of the use of areas and also during the communication about problems and the evaluation of the land use potential of the planning area.

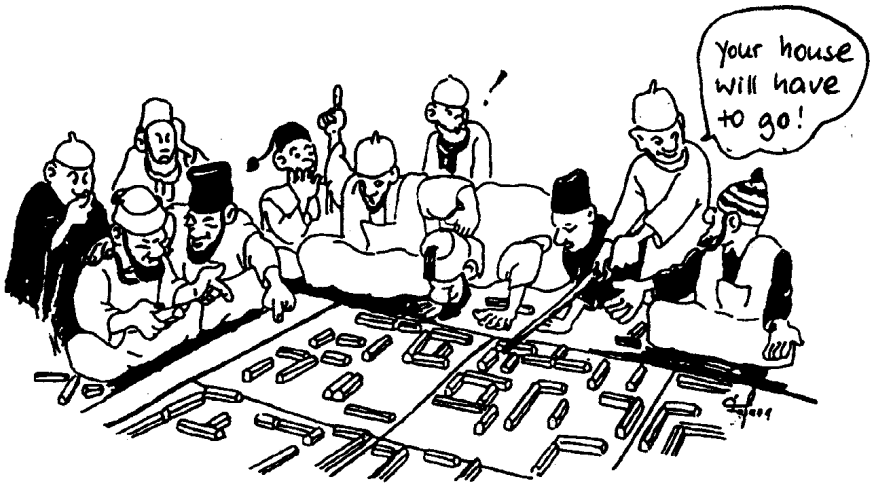
Methods developed in the social sciences and anthroplogy are also used in land use planning. These methods support the gaining of knowledge of and an insight into the socio-economic and socio-cultural relations.

They are also applied in the interactive analysis of the stakeholders, when analysing group specific interests, social values, viewpoints, and preferences. Semi-structured interviews, group interviews with a special problem focus or those tools concentrating on problems, and also ranking techniques are widespread. Visual sharing also plays an important role: maps of the social structure and of social relations, resources charts and charts depicting the decision-making processes, presentations in the form of comic strips of the history of the village (historical transects), seasonal calendars, calendars of working time and agricultural cycles, calendars showing the relations between festivals, celebrations and agricultural cycles, etc.

[2] A catalyst is a person, who influences processes to start without taking an active part. A moderator presides over processes in a conciliary manner to ensure harmonious discussions. This person is responsible for the quality of the processes but is not directly responsible for the results.

Diagr. 4 Participatory planning game seen in a home-made model

(Source: E+Z, 1992, p. 15)



Drawing: Ibrahima Fofana

Example: Sri Lanka

The objective of the **Dry Zone Participatory Development Project** n Sri Lanka is to create sources of income by developing land use types which are adapted to the climate, especially for the poor population groups in rural areas. The major aspect is the development and implementation of a participatory approach in planning and implementation. The basic idea suggest the following sequence:

- training of local workers in PRA techniques in selected villages;
- development of village resources management plans with the local inhabitants on the basis of this training;
- implementation of these plans with the support of local institutions and the village population.

In this process, great significance is given to the joint learning process of the participants.

A comprehensive training program was worked out for the members of the co-operating organisations. The target group comprises the members of the Beneficiary Participation Program, of the Technical Support Teams and all other organisations connected with the project. This training is intended to put them in a position to adequately apply their technical knowledge within the framework of land use planning at village level, and also in their capacity as multiplicators, to feed

their experience with PRA into their respective organisations. PRA is used not only in the examination phase, but also in planning and implementation. The training of workers is therefore not restricted to a one-off PRA crash-course, but covers continuous consultation and further education. Since it is partly the case that the villages have very different starting conditions, the participatory methods are adapted to the respective local conditions.

Institutional Forms of Participation in Land Use Planning

Concerning the institutional form in which the various groups participate in LUP, there is a wide range of differing objectives and different degrees of formalisation and organisation. In many project situations the objectives of participatory planning are mostly achieved not by one single form of participation and co-operation, but by applying different ones simultaneously, in combination or as mixed form.

The institutional forms of participation range from the community or village meeting, informal and formal interest groups or user groups of varying size and focus up to purpose-oriented, formal committees, often having a technical character such as LUP or resources management committees. The latter includes organisations such as:

- Village Watershed Development Committees (VWDC) in India;
- Community Based Land Use Planning and Local Watershed Committees (CLMC) in Thailand;
- Local Operative Units in East Africa;
- Catchment Conservation Committees (CCC) in Kenya;
- Comités Villageois de Gestion des Ressources Naturelles (CVGRN) in Mali.

Which form of organisation is appropriate depends mainly on the context. Opinions are divided concerning the usefulness of the one or the other form of organisation: for some formal committees greater continuity is promised and more obligation required for land resources management. Others mention the experience that it can be very time-consuming to build up formal structures and that the degree of organisation of such committees is often (still) not commensurate with the duties. In addition, such externally proposed formal structures could also

hamper an active participation by the village population due to its partially "imposed" nature.

Internal Village Organisation

However, before it is proposed externally that such organisational structures be established, a detailed check should be made what organisations or institutions already exist in the village. If it is proposed and promoted to form new organisations, the impact on organisations already existent must be examined and considered. In case of a complete absence of organisations and institutions, the creation of new structures is necessary, and particular attention must be paid to the aspect of their sustainability.

In this context, reference is made to the double meaning of the term "institution". Colloquially, "institution" is often equated with a body of public or private law. Here, however, the sociological term "organisation" is more appropriate. "Institutions" in the sociological sense designate bundles of generally accepted norms, which regulate certain areas of life. In this sense, traditional institutions are significant if they have developed effective rules for protecting land resources and settling conflicts.

Example: "Rural Organisations"

A workshop was held in May 1990 in southern **Paraguay** within the framework of land use planning projects supported by GTZ together with advisors from various organisations. Four working groups were dealing with, among other things, the question "Which forms of organisation are existing in your working area?". In former discussions, limited, and in some cases, the non-existence of any form of organisation of the rural population had been mentioned as major obstacle to successful extension work. After the meetings, the working groups returned to the plenum with surprising results. The organisations identified will be listed here in order to demonstrate the diversity of organisations in the rural area.

First Working Group: Fishing and hunting club, "May Sun" sports club, Catholic Church, Baptist Church, schools, parents' committees, festival committee, transport organisation, committee for electrical power, road-building, joint use of machinery and exchange of products (e.g. in slaughter);

Second Working Group: Farmers' committees, co-operative, government rural advisory teams, regional agricultural research centre, regional study centre for Indian matters, village and

Indian communities, farmers' groups in new settlements, landless farmers on illegally occupied land;

Third Working Group: Church committee, social club, producers' committee, health centre, commission pro construction of a schoolhouse ;

Fourth Working Group: indoor-football-club, agricultural school, primary and secondary schools, community administration, political organisations (parties and others), neighbourhood commissions, trade houses for Yerba tea and ceramic products.

Forms of participation in land use planning at supra-village levels: Scaling Up

The majority of examples given have introduced participation mainly at neighbourhood, village district, village and community level. They deal primarily with local problems, which are manageable. Generally, co-operation takes place between participants who are well informed and motivated.

Some projects of Rural Regional Development (RRD) try to extend their radius of action beyond the village approach. LUP in this instance does not concentrate only at village and community level, but at regional level. Thus there is, to an increasing degree, a need for forms of participation which are also useful for this level, such as watershed areas, and which meet the demands of inter-village and supra-village co-operation and of settling conflicts. Land use problems of this kind can often be solved only at higher levels (district, regional, provincial, and national).

Delegation

We are talking here about forms of participation, which fulfil their purpose beyond the village level and related duties. This includes inter-alia participation processes which can be used in mediation between competing neighbouring villages, between resident farmers and nomadic livestock owners, between up-stream or down-stream locations in a catchment area, or between politically powerful and marginal groups in a forest area. This means, however, that the specific forms of delegation and representation of the participants must be developed in supra-village-level committees, as well as in forms of communication and settlement of conflicts.

Involving government authorities in participatory planning processes

Forms of participation and action are often only developed in the co-operation process itself. Organisations and institutions can also keep a transitory nature, and be adapted and amended. Interest groups which have formed in order to achieve a clearly defined goal, e.g. to introduce and test a new land use system, often fall apart after achieving the goal. When another occasion arises, the participants can form a new group of a different composition.

Of particular significance is the relationship of new participatory institutions to the government administration, since the sustainability of the participatory planning approach depends on it. The question of whether the participatory process is suited to being incorporated in the local administration structures or whether there is a danger of forming so-called "parallel administrations" should be examined in the initial stages.

In a series of projects with a LUP component in Thailand, Sri Lanka, Mali, Kenya and Zambia, government structures at supra-village level are explicitly included as major participants in land use planning or resources management. This is an important aspect as far as institutional sustainability is concerned. Planning institutions at supra-village level (district, "Cercle") are multi-disciplinary teams composed of technical services for agriculture, forestry and animal husbandry. Another form consists of mixed groups of technical services and members of the local government. Planning is carried out as a participatory dialogue by the teams from the districts together with the village contact partners.

This joint learning process promotes simultaneously the qualification of the communities and the government authorities or technical services at district level. The technical services have for the first time the opportunity to act without the narrow sectoral boundaries of the ministries. Due to the intersectoral character of LUP, the services are now able to develop creativity in the sense of integrated resources management. Thereby are, often surprisingly positive working results achieved.

Learning processes and the danger of demanding too much

When the participatory/co-operative planning process is put into practice, the participants in the village, in the project and in the government services together gain new knowledge and new skills. Other viewpoints and attitudes are recognised, understood and respected, and under certain circumstances, roles are redefined.

Of major importance for the long-term success, for the institutionalisation of the participatory process and the sustainability of planning is the time component. Learning processes have to be given time to develop.

However, care must be taken not to demand too much. "Forced" participation, permanent marathons of village meetings in the work-intensive season or setting up committees for every issue quickly overstrain the physical, mental and socio-cultural capacity of the people and the local institutions. The disappointment and resignation will be even greater if no visible improvement in their lives within a short period can be achieved.

4.5 Gender Approach in Land Use Planning

From the foregoing, it has become clear that a detailed analysis and description of the participating groups is a precondition for realistic land use planning. The aim of the participatory process is to identify the different interests of the participants in order to create a basis for the negotiation and decision-making process. Men and women often have different access to resources, different opportunities of expressing themselves and different interests because of their economic and social roles as well as areas of work. Therefore, gender is an important criterion of differentiating target groups. In the project practice, this topic is still dealt with in different ways and is discussed controversially. It therefore appears appropriate to examine closer the criterion of gender differentiation and its effects on land use planning.

Photo 7: **The Economic Role of Women: Women working as farmers in a rice field, Sri Lanka.**

Why is it especially important in planning to differentiate the participants into males and females?

A few examples from the project practice will illustrate why a gender-specific differentiation in land use planning is not only appropriate, but also necessary with regard to the interest of equal treatment and of equalisation.

- The interests and priorities of men and women in land use can be different.
- In Northern Benin, the top priority for young men was to ensure a high soil fertility, even if the fields were located far from the village. For the women, the closeness of the fields to the village was of prime importance because they have to manage the work in the household as well as in the field.
- Men and women have different scopes of action, opportunities of expressing themselves, or decision power, etc. Due to traditional conditions, women are often legally and socially disadvantaged. They experience difficulties to get their interests accepted.
  Given the increasing shortage of land, women's traditional land use rights are more and more restricted, and they are pushed aside onto poorer soils.

  The increasing rural exodus or the seasonal migration by men results in the cancellation of the traditional distribution

of work. Women have more duties piled upon them, such as the complete responsibility for providing food for the family without receiving any rights for access to land. This makes it difficult to carry out soil improvement and other conservation measures.

Women can have a direct disadvantage by land use planning projects (e.g. the loss of traditional rights of land use, disadvantages when title deeds to land are granted in settlement projects).

- The introduction of new technologies or other innovations can have various effects on men and women due to the gender-specific division of labour.

  Ploughing is mostly men's work. Introducing a plough with oxen yoke makes it possible to expand the cultivated area. At the same time, however, the burden of work on the women is increasing because they are frequently responsible for weeding.

- There is the opinion that the application of participatory methods in the planning process, negotiates and takes automatically into account the interests of all stakeholders.
  In practice, however, experience has shown that the needs of women are often not integrated into the discussion process, unless this is specifically proposed due to the project design.
- The integration of women into the planning process requires special considerations and additional efforts in order to overcome social barriers.

  Women are often not organised. Due to basic social conditions, they are generally not used to express their interests in public and are therefore overlooked.

  Women often do not perceive their central role in agriculture, but see reflect their role as "an assistant" to the man (Guatemala). Therefore, they do not consider it as necessary to participate in the planning process. In addition, the fact that they have a heavy workload makes it difficult for them to participate in planning workshops.

  They are rarely included in advisory and further education measures and have therefore little self-confidence in dealing with external advisors. They are hardly institutionally involved in any decision-making processes and represented in committees. In addition, there are language barriers when the local language is not the national language (Maya and

Spanish in Mexico). Partner organisations in the Technical Co-operation mostly fail to give priority to the participation by women. Mostly the men, who are employed in these organisations as consultants, planners, etc., and, for socio-cultural reasons, have either no access to women, or have difficulties to get access.

Due to their gender roles, women rather than men are disadvantaged in planning process. Thus the following paragraphs deal mainly with the problems of a higher degree of participation by women.

What results are expected from an increasing degree of participation by women in land use planning?

A precondition for the appropriate consideration of women in planning and in balancing measures are the visualisation of their diverse areas of work, their problems and problem-solving strategies within the framework of the situation analysis and related discussions. If women play an active part as a major group of resource users than better planning results will be achieved. So, the reality in how the land is recently used is reflected and the sustainability of the implemented measures will be ensured .

One result of land use planning must be to secure the access to land for women according to their roles and areas of work. Including them in the planning and decision-making process, e.g. the work in committees, their competence in negotiations is promoted. Empowerment of women is an explicit objective of the Technical Co-operation.

By sensitising and advising partner organisations on a gender-differentiated working practice within the framework of land use planning, the quality of their work will improve in a sustainable manner.

Analysis of the working conditions of women as a basis for their participation

A precise analysis of the working conditions of women is a pre-condition for the development of short and longer-term strategies for the participation of women in land use planning. The socio-cultural conditions play a role in determining the form and intensity of participation of women and can cover a spectrum from direct participation to a representation group of women's interests. It is important to develop appropriate

strategies together with the partner organisations. On the one hand they must be managed by them, and on the other hand, this opportunity must be used to sensitise and further educate colleagues (on-job training).

Key Questions

The following key questions are helpful in the analysis:

1. Which institutional, legal, social and cultural basic conditions promote, hamper or exclude the participation of women in LUP?
2. Do the partner organisations advocate the participation of women, and do institutional preconditions exist to initiate and institutionalise participation of women? Is the related political will existing?
3. Which working conditions can be influenced by the project?
4. Can the project influence the granting of land title deeds or the allocation of land to women, e.g. within irrigation systems?
5. Can the access to means of production and credit by women be improved?
6. Can the employment of women, e.g. as advisors, be proposed or be negotiated?
7. Is a further education on the topic of gender for the colleagues of partner organisations useful?

Methods and procedures for promoting participation of men and women

Some positive experiences from various projects are presented below[3]. Team members should know the methods and techniques of the gender analysis, i.e. an analysis of a gender-differentiated situation. This includes:

- Drawing up activity profiles: Who does what?
  Who invests how much time for which activity?
  Who earns what income doing which activity?

[3] See, e.g.: Griffin, John and Frischmuth, Christiane: "Land use planning for improved natural resources management: Approaches, experiences and ideas from Siavonga, Zambia", 1994. Kerstan, Birgit: "Introduction to the Gender Analysis Method: Aims, Categories and Tools", May 1993 Seidemann, Sabine: La Promocion de la Mujer en el Proyecto de Desarrollo Rural Regional Los Llanos, La Rioja/Argentina, 1993.

- Working out profiles, allowing to identify the situation concerning the access to and rights of disposal of resources, such as land, capital, markets, information, consultation, etc.

  Who has what access and which rights?

  Who makes the decisions on the type and extent of the resource usage? In which areas there are imbalances between men and women and what effects do they have? Does this cause disadvantages?

- Drawing up participation profiles:

  Who is member in which organisation and in what function?

  Who participates where and how in decision-making?

In this context it is also important to recognise interactions, agreements and exchange relations between men and women, such as e.g. mechanisms of distributing income within households, as they can be potential links for further negotiations. For example, in Northern Benin, men sometimes help women with fieldwork in return for hoeing weeds in the men's fields. In Northern Ghana, women who help their men harvesting crops for sale are paid directly. For example, in groundnut cultivation areas they receive a part of the harvested nuts.

Women are not a homogenous target group

At this point, it must be warned not to generalise. Women are not a homogeneous target group either, since their roles, fields of work, positions and thus also their opportunities to articulate differ very much, depending on the region, their ethnic group, age group, education or economic power. There can be conflicts amongst women, which have manifold origins. For example, tension can arise between members of a clan and the members of the husband's family. Single women have a different status from married women. There is also the aspect of belonging to different socio-economic levels; conflicts between rich and poor concern also women.

The chosen forms of participation must give to women and to men the opportunity to express themselves. Additional measures will be necessary in order to motivate women to represent their interests. This can happen by institutional support, but also applying measures aimed at building up trust in other areas where forms of participation are being tried out.

Example: Argentina

Within the framework of a resource management project in North-West Argentina, the formation of village committees was encouraged. In various village meetings talks came up about how important it is to elect women to the village committee in order to ensure that their interests are represented. However, no woman declared being willing to be elected. The women argued that they could not do this, because they did not know how such a committee functions. Also, they would not have the confidence to discuss with other village representatives and possibly take controversial standpoints. At the same time, the project had started to organise sewing courses at the request of the women in one village. This was intended to create the opportunity for them to have an income. The courses were a source of controversy within the project team, which did not want to promote "typical" women's activities, but rather their participation in local decision-making.

After long discussions, it was decided to use the sewing courses also for making women familiar with questions of organisational development, representation of interests and dealing with finances. After only one year, some women felt in the position to work in the village committee. Two women were finally elected.

Work in Sub-groups

There were positive experiences in many projects, that part of the work was carried out in homogeneous sub-groups, in order to make an open discussion possible. Simultaneously, differences in perception and positions were worked out and discussed. Due to the distinctive division of working areas and responsibilities between men and women, working separately with women was mostly accepted without any problem. The prerequisite is, however, that the objective is plausible, e.g. discussion of the women specific problems on the basis of the division of work according to gender. Local forms of discussion and competence or deficiencies must be taken into consideration in this context. This also includes, e.g. oral traditions, the often widespread illiteracy or the lack of knowledge of the "official" national language.

For the reasons mentioned above, it is recommended that methods and techniques of Participatory Rural Appraisal (PRA) be applied separately according to gender. The following

instruments have shown to be suitable especially for making gender-specific problems and strategies visible:

- Discussion of the village history: What has changed? What have been the effects of the introduction of new technologies? Who has benefited from this? Is land in shorter supply? Have the soils become degraded? How have the changes affected men and/or women? What are the perspectives?
- Drawing various maps: the village, the land and its owners as well as its users, the fields with distribution of use and infrastructural installations. This gives a clearer perception of the milieu and the areas of activity of men and women;
- Drawing up gender-specific work calendars;
- Preference ranking.

However, above all, work in separate groups is to be seen as a preparation for discussions with the entire village during which positions are made clear and compromises are worked out. Depending on the socio-cultural context, women should present and discuss their results or - if this appears impossible - by delegation. It is important to set a sufficiently generous time frame for this purpose so that learning processes can take place.

It must be ensured that all information reaches both men and women. As experience shows that men often do not pass information on to their women, invitations to meetings should also be addressed directly to the women. It has proved useful to identify female contact partners in the village who convene the meetings. The venue, time and duration of meetings must be chosen according to the mobility of the women and the time they have available.

Participation by women should be encouraged when committees are formed, e.g. as representatives of certain user groups. It makes sense to discuss the chosen forms of participation with the local organisations, which deal with the promotion of women.

In the case of government interventions, such as granting land title deeds, women should also be considered as special stakeholders. Depending on the context, it may be appropriate to bring the arguments of a "women's quota" into the discussion.

In summary, it can be said that generally all methods and procedures are suitable if they promote the participation of disadvantaged groups, which are weak at expressing themselves. However, the procedure must be adapted to suit the framework of the general conditions and reflect the milieu. No artificial scenarios should be created. The viewpoint and intentions of the project are important: Are women perceived at all as land users? Is there any intention of allowing them to participate actively in land use planning? Where there is a will there is a way!

In order to observe the effects of LUP on different groups of participants, a gender-differentiated monitoring of the effects must be established.

Example: Paraguay

Within the framework of a settlement project in Paraguay in an uninhabited area of forest, land was consciously given also to single mothers. However, the women, who all still had small children, were not able to do the heavy work of clearing the forest, neither did they have the financial means to employ labour. Therefore, they were not able to cultivate the land. They also had no social protection. After one year, most of the women had given up. In order to help them out of their economic misery, it would have been more sensible to help them looking for land in their old villages (traditionally, neighbours or relatives make land available to single mothers). In addition, the arrangement of lines of credit which would have made it possible for them to buy seeds, fertiliser, if needed pesticides, or to employ outside labour as well produce cash crops -in this case cotton, would have been supportive to them.

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5 Implementation in Land Use Planning

This chapter is guided by the principle that LUP without implementation is a waste of time and energy. In this process, measures taken must primarily be oriented towards the working rhythms and learning processes of the beneficiary population, i.e. the main actors in the implementation process. It often proves to be disadvantageous to force the plan implementation. It is for this reason that the implementation occurs within the framework of partial implementation plans which are agreed by the participants for realistic time periods. Partial implementation plans should contain attractive goals and adapted to suit the volume, which can be achieved by the beneficiary groups.

Since the implementation will increasingly take place within the framework of decentralised (administration) structures, capable colleagues must be prepared for the new assignments. This can be done through consultation and training. At village level, checking mechanisms must be established and encouraged. A prerequisite for this, and for ensuring incentives and compensation, is the viability of at least a rudimentary legal framework. In certain cases in which the target group does not adhere to agreements for the implementation despite available capacity, it should be even considered to (temporarily) break off the co-operation with a village.

Lead agencies for implementation are mostly state authorities or regional development bodies. The following basic principle applies: integrated planning, sectoral implementation. There is a strong interdependence between the volume of investment, the sources of finance, the implementing institutions and the form of participation. The implementation is monitored and controlled with the help of a M&E system on the basis of commonly fixed indicators. Whereas "physical" results can be

easily measured and judged, the tools for "measuring" (learning) processes are still underdeveloped. In M&E, beneficiaries should not only fulfil the function of data collectors, but also be able to bring about timely corrections in planning.

5.1 From the Land Use Plan to its Implementation

In projects dealing with land resources management and rural regional development there are different ways of carrying out measures. Experience has shown that especially the implementation of any relevant measures for wide areas needs also to be planned as such. In many cases, however, the need for planning becomes evident only due to the directives for the implementation.

The framework for the changes to be made is given by the land use options, depicted and described in the land use plan, by the agreed regulations on land use and by the associated investments, both in terms of finances and labour. It is not rare that the amount of planned intervention exceeds both the available labour of the target population and the budget. Although the implementation of a land use plan could be speeded up by other development organisations by providing additional external labour and finances, it is not desirable. Explicit reference should be made to the necessity not to force changes or to implement too quickly. Time must be given to reflect and absorb. The life rhythm of the beneficiary population should be respected.

The implementation of the plan is the real and original task of the target population. External support should only consist of friendly advice and the provision of materials as well as specialised know-how, which would otherwise not be accessible or affordable to the target group. The assignment of the project is restricted to testing measures, but in no way to carrying them out over a wider area.

It is important for the implementation that the measures have a binding character, i.e. the nature of the superior directives (e.g. identifying protected zones), the dynamics of changes of the general conditions relevant to planning and implementation as well as the participation by the intervening authorities. The implementation should be organised in such a way that the authorities concerned can participate in the measures according to their sectoral orientation.

The content and kind of the measures can be arranged according to different criteria, as they can also be combined. The selection has a decisive effect on the implementation process:

- Individual measures can be "spot measures" or can cover wide areas;
- Measures can aim at changes in behaviour of people;
- Measures can be of short, medium or long-term nature.

In addition, a differentiation is made among:

- technical measures (erosion protection, infrastructure);
- administrative and legal measures (laws, granting land titles);
- institutional measures (creation of committees, etc.).

5.2 Implementation in the Form of "Feasible Packages"

Adapting the plans according to the willingness and potential of the target group means generally that the technical interventions will be broken down into "feasible" packages. These have a fixed time frame and concern annual and bi-annual implementation plans. Therefore, there is no single "implementation plan", but a series of successive partial implementation plans which together contain all of the intended interventions.

Partial Implementation Plans

When drawing up the individual partial implementation plans, attention must be paid to ensure that these contain short as well as medium and long-term "attractive" interventions in approximately the same ratio as the entire plan intends. This will give the project the opportunity to offer a sustainable and attractive mixture to the target population for each implementation period.

In the first few years it should be avoided to implement only the most attractive measures due to their profitable short-term character. An example of this would be the initial installation of irrigation schemes and the afforestation, with slow-growing trees in a later phase. In this way, especially the ecologically significant interventions, which after all often represent the ideological engine" of land use planning, would be left behind. This danger is reinforced due to the fact that in the eyes of the village beneficiaries long term benefit interventions have often a very low ranking. Many of these measures will only be carried out if and when the necessary motivation is created due to a dialogue-orientated partnership co-operation.

If it should emerge that even the partial implementation plans exceed the potential of the beneficiaries and therefore some planned interventions remain unachieved towards the end of an implementation period, appropriate conclusions must be drawn. The progress in working out adapted partial implementation plans will be slower and more realistic. It is worth to consider also labour-saving techniques (e.g. direct seeding of trees instead of planting seedlings from a nursery).

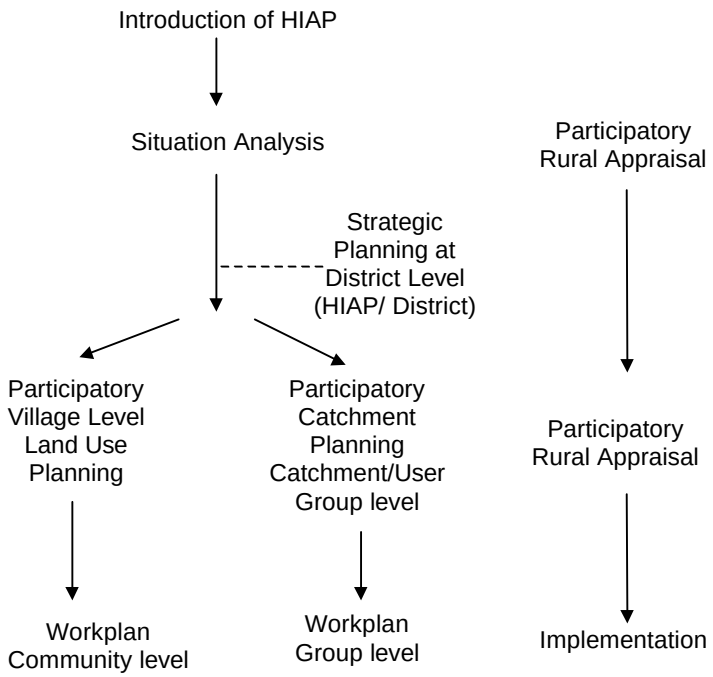
Tanzania as an Example

In the **Handeni Integrated Agroforestry Project (HIAP) in Tanzania**, measures in the field of sustainable land use are implemented as early as possible. Applying a twofold strategy, first measures are developed and implemented with user groups in an early stage simultaneously to the "village LUP". By taking the catchment/user group-approach, the aim is to apply sustainable land use practices and to cover large areas of connected fields belonging to the user groups. However, this cannot be applied to areas, which require communal planning, such as in potential conservation areas.

Using the second approach: participatory village-level land use planning , boundaries of areas with different land uses should be identified, such as agroforestry areas, arable and pasture lands, conservation areas, areas reserved for special use, etc.

Both approaches complement each other. They should guarantee the protection and sustainable use of the natural resources. So, the available capacities of all participants can be better used, in a step-by-step procedure in the planning and implementation process.

Overview of different stages of HIAP's twofold approach



Crises and conflicts will occur again and again in the implementation process. The motivation to co-operate will fluctuate both in the beneficiary group and amongst the advisors. The course of a project, be it in planning or in implementation, is rarely a smooth process, which can be planned to the last detail. Many things are predictable, but some occur unexpectedly.

Special labour peaks during sowing and harvesting times must be taken into consideration. In addition, traditional festivals and other special events will occupy the attention of stakeholders temporarily. During those times, the project team has to be flexible and show understanding.

A high degree of creativity is required in order to find new motivation mechanisms. However, if it is still not possible to continue with the implementation, the following procedure can be proposed.

Crisis Management

Partial implementation plans cover a relatively short period of time (1 - 2 years). If the beneficiary (target) group does not achieve what has been jointly agreed, the co-operation with the village can be interrupted or even terminated without any important binding obligations on the project. The short-term nature of partial implementation plans create obligatory breaks,

but the target group should be aware of. Such an interruption can be limited in time. Often are 1 - 2 years sufficient and neighbouring villages will have advanced visibly. In this way, the motivation can be recreated, so that the co-operation can be taken up again. The project has so only a contractual obligation *vis-à-vis* the village within the framework of the present partial implementation plan.

Preparation for the Implementation

If it is not guaranteed that a project, which has initiated and finalised the process of participatory planning is also active in implementing, then special precautions must be taken. A minimal objective should be to provide further technical service to the indigenous planning agencies, which were qualified during the initial project work. In such a case, it is often possible to identify complementary national or international financing partners and to involve them into the project at an early stage. Ideal conditions can be offered to those partners, and available finances can be used directly in the implementation without a comprehensive preparation. This is a situation which many international donors, especially in financial co-operation, should wish for themselves and their partners.

5.3 Implementation Strategies

The effective implementation of a land use plan is the task of the intervening governmental and non- governmental organisations in the region. Planning projects should stimulate this implementation and support it technically, e.g. the development of implementation strategies, financing concepts and process controlling systems. This is a step-by-step as well as a participatory process.

Important elements of implementation strategies

Mixing Measures

There is no doubt that individual measures aimed at short-term economic yield are initially the point of interest of the stakeholders. While planning the implementation, short, medium and long-term effective measures must be combined with each other according to their economic attractiveness. So, not all "profitable" measures will be implemented only at the beginning or only at the end.

Direct Implementation

In the initial stage, the plan implementation is accompanied by the project. In this process, experiences with the implementation management are being recorded and processed for further consideration. Partners of the project are prepared specifically for the implementation assignments.

Indirect Implementation

The implementation and related monitoring of the planned measures should be transferred by the project to the local program partners (government organisations, NGO s or self-help groups) as soon as possible. Periodic evaluations, in which all program partners should take part, create the basis for the joint learning based on the experiences gained during the implementation. The strengths and weaknesses of the partners can be identified, proposals for an improvement drawn up and the need for further education defined. Also, a redistributing of responsibilities is possible.

Decentralised Implementation

Independent on the planning and negotiation levels selected, the implementation of the plan will be always decentrally organised via local structures. If needed, support can be given externally. Even basic national or regional directives are focused on changes in land use which are made locally, or on the termination of certain undesirable land use practices. This means, however, that organisations and institutions should be established, reinforced or co-ordinated at local level, in order to guarantee the plan implementation. However, decentralisation is not always and everywhere useful. This applies particularly to legal initiatives. The creation of a natural conservation law as the result of the land use planning process serves as an example.

Participatory Implementation

It would be optimal that those organisations, institutions and beneficiary group representatives, who have planned locally, also implement the LUP measures together with other stakeholders. The ideas of individuals (household, large family) should, after being adapted to the local overall concept, be considered, in order to take into account hidden agendas in the field of land law, traditional land use regulations, etc.

Photo 8: **Erosion protection carried out by the villagers as part of the implementation of a land use plan (Niger).**

Sectoral Implementation

Implementation should be organised sectorally during both the initiation and the pilot phase, and finally in the whole area by the local partners. The responsible authorities are entrusted with the implementation according to their sectoral orientation.

Implementation Management

Broad impacts can only be achieved by an efficient implementation management. Thus, extension plays an important role, both in the pilot phase of the project and during the implementation by the local partners. Effective land use planning is closely linked to the abilities of the participating organisations, groups and individuals.

Know-how of the Participants involved in the Implementation

The implementation of an individual measure requires know-how in the groups at various levels: the target group, the technical extension service and the decision-makers at regional and national level. This applies to the establishment and the administration of a protection zone as well as to the large-scale implementation of measures in land resources management. In addition to the consultation of the implementation management, practice-oriented training and further education measures, which are adapted to the needs and capacities of the participants, are also project activities.

Concerted Action

Planning is a sequential description of measures to be taken in all areas which are affected. The same applies to the implementation: prescribed negotiation and co-ordination steps are to be carried out in a certain sequence. For example, in planned activities to increase the production in agriculture, the

increased costs for transport, storage and marketing can be taken into account.

Local Controlling Mechanisms

Local controlling mechanisms are an important tool for ensuring the decentralised, participatory and concerted implementation of the planned measures. Mostly, these mechanisms have to be developed in the beginning. This requires time for the development of such an controlling mechanism and related tests. Examples of such mechanisms are duty books or overview tables, which describe the activities, participants, time and quantity in carrying out a measure. Transparency is ensured by displaying these in public.

Conviction and Voluntary Action

Both aspects, conviction and voluntary action, are basic principles in land use planning. They apply without restriction also to the implementation, and even in the process of sensitising stakeholders for the participation in the program.

Minimum Legal Framework

A legal framework is necessary for controlling as well as ensuring incentives and compensations. The legal frame should be kept as simple and transparent as possible. It contributes to achieving the sustainability of the land resources protection measures.

Any existing legal framework should be used and taken into consideration during the implementation of a land use plan. This makes it generally easier to achieve a consensus and to support it. Examples can be given as follows:

- Town and Country Planning Act in Malaysia;
- National Land Use Planning Commission in Tanzania, Act of Parliament;
- Land Development Act in Thailand;
- Soil Conservation Act in Rwanda;
- Soil and Water Conservation Act in Uruguay;
- Land Consolidation Act in Indonesia.

Different countries with substantial small landholdings have developed special tools for land tenure and the implementation of land use plans. In Indonesia, the active participation by those affected and their high plan approval rate (85%) was made a prerequisite for implementing plans (Land Consolidation Act of 1988).

General Considerations and Remarks on Financing

Implementing planning results and/or evaluating them implies automatically changes in the previous land use pattern in peri-urban, rural and village areas. A plan has not a purpose in itself, but is an instrument for achieving useful and sustainable land use; it is not an objective but a tool to achieve an objective. Consequently, if the means for the implementation are short or even lacking, a debate on general principles should be held even before the plan is drawn up. Appropriate decisions should be taken on the basis of the available or potential financial framework. Without this security, even a well established plan will soon face financial bottlenecks, and it will be not possible to implement the measures. In addition, organisational and institutional aspects of the implementation must be considered by all means before a plan is drawn up. The circumstances in the institutions of the region and its vertical structure (of state authorities) represent important conditions for planning and implementation. The contents, the scope and the arrangements of the measures prepared in the plan must consider these institutional conditions.

Whereas a small-scale plan for a micro-region has modest financial claims on its implementation, higher costs must be expected for the implementation of a large-scale land use plan from the early beginning. In addition, the differing complexity of plans also influences the costs of the implementation.

Typical minor measures are:

- education and extension programs for participatory land use planning;
- legal consultation;
- drawing up micro-regional development and investment plans;
- participatory approaches to organise the local/regional implementation of the plan;
- minor interventions in irrigation schemes (drainage, small-scale irrigation, supply of drinking water, etc.).

Sources of Financing

Potential sources of financing are rural development projects which often have a small investment fund at their disposal, well developed contacts with the local population and provide finances relatively quickly and without administrative problems.

Additional sources come from local NGO's, sectoral ministries or development funds. However, these means are very limited, and can often offer only additional financing. In general, these are fed from bilateral or multilateral credit lines.

Measures, which are linked to a greater investment, for example for road and bridge building, damming of rivers and enforcement of riverbanks, require individual finances, partly of high amounts. Special projects, which are financed bilaterally or multilaterally, special development funds or regional bodies having appropriate means, and sectoral Ministries, might finance these measures. Concerning communal or regional investments for land resources conservation, or for increasing or stabilising the production capacity, the explicit participation by benefiting stakeholders in form of labour, materials or capital is common.

Large-scale investments in form of building water reservoirs or setting up national parks, which by necessity result from land use plans and which are technically comprehensive, can cost a large sum of money. In general, these costs are borne by the bilateral or multilateral financial co-operation or are fed by externally financed sectoral or regional development programs.

Based on the investment demands to be considered for the implementation of land use plans, it emerges the question of the formal realisation. If the implementation is linked to an outflow of or to extensive financial means, there is a considerable organisational and administrative process involved. This additional task cannot be accomplished as a sideline by only one of the participating organisations. The organisation in charge of the completion of investments must make additional capacities available. If necessary, the project must plan an objective-oriented training and further education in order to improve the capacity and motivation of the implementing organisation.

The responsibilities for planning, implementation, financial and administrative completion can be splitted amongst two or three different organisations. It is also possible to concentrate it in one organisation. For example the planning agency, the implementing organisation itself or a new institutional structure to be created can take over the complete assignment of a single investment. In principle, the implementation is carried out according to the sectoral orientation of the participating bodies. The basic principle is: plan together in an integrated way, but implement sectorally .

Use of Existing Organisations

The implementation of the plan should be done by an already existing organisation. Preferably, organisations should be selected which are not at the same time also responsible for the financial and organisational completion of one or more main plan components. This prevents internal animosities, and the organisation can concentrate on the main assignments of the program management.

In an ideal scenario, existing regional development bodies take on the leading function in carrying out the measures, and set up appropriate co-ordination mechanisms (steering committee, regional development council). If there is no suitable set-up already in place, one of the participating organisations must take on these assignments. Usually, this has to be a state authority. If this is not promising, a new organisation has to be created which is, however temporary in nature. Nevertheless, it should have the necessary organisational, material, financial and personnel capacities. Irrespective of which option is finally selected, all participants must together establish the following:

- functions
- responsibilities
- planning systems
- co-ordination systems
- checking systems
- tools and mechanisms of sanction.

Minor pilot measures or those aimed at building up trust can be carried out by the local population through self-help groups, co-operatives, farmers' organisations or local NGOs. It is also possible that companies in the private sector or individual extensionists take over this part. With increasing investments and technical complexity, it makes sense to contract special private institutions. Governments or private implementation organisations will then concentrate on the supervision and monitoring of the process.

Lead Agency

The technical and administrative requirements of the responsible organisations carrying out the measures are varying. This makes it necessary to use the appropriate examining and evaluating tools, in order both to examine the qualifications of individual organisations and to ensure the most efficient co-operation possible. These instruments are used by a so-called

lead agency, which also carries out the individual measures and supervises the conclusion of contracts with private companies or individuals. Interdependencies and recommendations for financial and institutional completion of planning and implementation are summarised in Figure 5. It becomes clear how broad the range is with respect to organisations carrying out measures, mechanisms of completion and the conditions, financial sources and requirements. This range can be explained by the nature of the extremely diverse investment requirements. Each individual case requires functioning mechanisms of co-ordination and checking.

Planning and its implementation appear to be promising if and when individual assignments are delegated. The priority contact partner is the private sector, on condition that it is functioning. In this instance also, responsibilities must be fixed in a contract. The state reduces its role to functions of standardisation, planning, financing and checking.

Figure 5 Summary of the Major Aspects of Financing and Organising the Implementation: Investment (volumes)

Object of Financing	Minor Activities	Medium Activities	Large(-scale) Investments
	• micro-regional development plans • consultation/extension • further education • drainage • small-scale irrigation	• regional/dept. development plans • drainage • irrigation • road and bridge building • afforestation measures • resources protection	• large-scale land use plans • regional infrastructure (roads, bridges, electrification, etc.) • resources protection • national parks • river damming • water reservoirs
Sources of Financing	• TC projects • sectoral ministries • NGOs • development funds	• development funds • sectoral ministries • NGOs • regional/sectoral • investment programs	• externally financed (WB, IDB, ADB, AFDB, GDB, etc.)
Organising Implementation	• NGOs • govt. services • private sector • advisors/companies • self-help groups • co-operatives	• govt. services • private sector • area bodies • NGOs	• area bodies • sectoral ministries • sectoral/regional programs
Institutional Prerequisite	• less institutional prerequisites • technical • organisational • administrative • good access to the target group	• specific knowledge and experience required • institutional prerequisites • technical • organisational • administrative	• high-grade technical specialisation • application of social techniques in planning and implementation • evidence of appropriate experience
Form of Implementation	• Implementation with sole responsibility contracting	• contracting of specialised companies in the private sector	• international tender • contracting of specialised private companies • sophisticated supervision techniques

5.5 Controlling the Implementation of the Plan by Monitoring and Evaluation (M&E)

Both the project as an independent structure in terms of organisation and administration, and the partner organisations participating as well as all other groups which work in planning and implementation need functioning tools of control. They must be able to accompany, check, evaluate and, if necessary, correct the implementation process of the planned measures. M&E requires attention and causes costs as well as work. There are only a few tested concepts to meet the special demands of M&E in projects in which land use planning plays an important role.

An M&E system must provide information to the project management about the following:

- which physical degree of implementation the project has reached;
- what ecological, social and economic impact previous interventions have had on the beneficiary population;
- which measures have already been taken to "qualify the indigenous partner" and other partners in co-operation;
- what costs have been caused by the process.

The precondition for using monitoring and evaluation is the availability of a basis to which it can be related. This basis is the land use plan, which has been drawn up, and the M&E system should influence the process of its implementation. Therefore, it should be talked about planning, monitoring and evaluation (PM&E) and not only about M&E. The detailed discussion on land use planning in the previous chapters, will be followed by paragraphs concentrating on M&E.

Conception and Organising M&E

When establishing the content, frequency and scope of the data and info to be collected, one often goes far beyond the actual requirements. This happens both due to a lack of experience and due to the fact that M&E indicators are sometimes difficult to define. It should be warned for an M&E approach aimed at monitoring all project activities. Generally, such an approach cannot be implemented, or it quickly comes to a "M&E fatigue", i.e. it is terminated sooner or later.

Collection of Additional Data and Information

Even the frequency with which data and info are collected, often exceeds the processing capacity of the recipients. Only very little information is required at a monthly or even weekly basis. Often, the collection every 3, 6 or 12 months is enough.

Data from the technical field - such as data on climate, erosion measurements or the results of growth - have absolutely no place in a M&E framework. They are recorded separately. The results are given in a summarised form to the project management (environmental monitoring). Data, which require an objective-oriented and more in-depth analysis, for example about the social effects of certain measures, are better elaborated in special studies. If the necessary expertise for this purpose is not available in the project, this requirement can be covered by specialists outside the project in larger intervals (1-3 years). Ecological monitoring can be organised with support of satellite images or aerial photographs, or by means such as transect walks every 4 to 5 years in a series of spot studies. Once such external assistance is terminated, the ecological monitoring should be continued over a period of 5 to 10 years.

Conscious Restriction

The flood of data and information, which is in any case overwhelming must be consciously restricted within the regular data collection for M&E. Ten to fifteen key data are sufficient for this purpose. There is no standardised and generally binding recommendation for selecting data, but it should be laid down from case to case in consultation with experienced external specialists.

Analysis and Consequences

A frequently observed weakness of M&E is the lack of an analytical processing of the data and information collected. Thus, the tables of figures, which are passed on, remain unused, the M&E system becomes a "data graveyard". It takes a considerable amount of specialist knowledge and time to compile project relevant knowledge from the data collected. However, the project management often has neither the knowledge of a specialist nor the time for this. A direct consequence is the users (including partner institutions) and the project management are unable to take corrective steps, and the necessary interventions in terms of both time and technical aspects will fail.

The analytical processing of the data collected is therefore a necessary component of M&E. The data must be presented in a short report which can also contain recommendations or warnings. It is the task of the project management or the state authorities at district level to arrange for such reports, and determine their form.

Steps for introducing an M&E system

The following process and preconditions must be established for an accompanying check based on M&E:

1. The availability of a planning document (land use plan including the necessary explanations), in which objectives, results, activities and an outline of quantities, have been discussed and co-ordinated together with all participants;
2. Submitting an organisational document, which has been co-ordinated and agreed amongst the participants (role distribution; additional support in form of money; material and labour; competence; time planning);
3. Proposing the necessary information and their indicators, as well as the details of data collection (when, how often by whom, quality, quantity, analysis, presentation) for each level;
4. Identifying feedback and application mechanisms for the project management, and the appropriate interventions and corrections by the project management;
5. Establishing a baseline at the beginning of the project as a reference for changes made by the project.

Tools and key indicators

Since the demands of the system and the related decisions to be made are different at each level, also the instruments and indicators have to be adapted. They should be compatible between the levels.

Community Level

At communal level preference is given to the use of forms to be filled in by hand. It is reported from Latin America that talking maps ("mapas parlantes") have proved to be a very helpful tool for the dynamic/periodical self-diagnosis and documentation of changes in land use.

District Level

The hand-written monitoring sheets ("fichas de seguimiento") or an aggregate of them can then be transferred to data carriers for the purpose of an analysis, in order to inform about the implementation level and to be processed for forwarding to higher instances. A participatory method of analysis should be established which is able to implement the results directly in situ without waiting for instructions "from above".

Project Level

The tools at project management level are oriented towards the analysis of the aggregated data. These refer to the set of objectives identified in the plan. Taking into consideration a balanced relation between input (personnel, time, material) and

output, the opportunities offered by the electronic data processing should be used.

In the M&E system, the indicators to be applied at various levels depend on the directives both of land use planning and of superior planning (e.g. ROPP). The indicators refer to physical data on areas (hectares, square km, etc.), type of land use (pasture, forest, conservation area, fallow, settlement, industry, etc.), yields, social objectives, degree of supply, etc. They should be monitored gender-specific.

When selecting and defining the indicators it is important to strictly apply strict rules of formulation. An indicator must take into consideration the object of observation, quantity, quality, as well as restrictions in terms of space and time. In addition to the "hard" indicators, soft or subjective indicators are being increasingly integrated, especially at lower planning levels. Community representatives, female speakers of groups and representatives of key organisations deliver important information which makes it possible to integrate the physical data in a qualitative context. They provide information about the social settings of the element being observed.

Data collection and direct follow-up

Generally at district and communal level, a ready schedule or formula is used and the current status of implementation, costs and directly detectable effects are registered and forwarded to the project management level. An appropriate training in the general conception, the aims and the application of tools is especially necessary at community level. If there is no understanding for the purpose of this, such tools in situ will be misunderstood as state control. Data and information will be falsified, or the tools will not be applied at all.

At management level, the data received will also be analysed and aggregated using a prepared tool. Measures, which are required immediately, are implemented and related documents forwarded, together with the appropriate notes to the district level or the regional level. Recipients and users of the information must be clearly defined: target groups, district councils, development councils or other organisations.

The "lower" levels have not only a "data collecting function". Depending on their competence, they also take decisions or demand decisions of the bodies located on the horizontal and vertical lines. In organising the plan implementation, the

following elements must be established: the responsible parties, competence and the authority to issue directives for the different levels, participating organisations and the authorities of planning, co-ordination and control.

How are Processes measured?

Measuring physical factors and monitoring financial or material results is a long process but, if done methodically, it is relatively easy. The process leading to these results is, however, just as important as the results themselves. How, using what means, tools and strategies were the results achieved? Finally, the sustainability of the results achieved depends also on the process.

But how can a process be evaluated? One important weakness of project visits, checks or evaluations is the fact that only punctual checks are possible. The important dimension of the process in a project can thus either not be recorded at all, or only inadequately. In future, additional tools will be required, in order to be able both to evaluate these processes and to consider them better in an extended monitoring system.

6 Project Organisation and Land Use Planning

This chapter will deal first of all with basic questions which should be answered by the project of the Technical Co-operation before the actual start of LUP. Often this will consider the following aspects:

- the position of LUP in the project;
- the introduction of LUP in various (current) project phases;
- the logistical and organisational prerequisites of LUP;
- the framework of general conditions to make LUP feasible.

LUP is not a "project type". The co-ordination and links to other project activities are necessary, such as further education programs, ROPP, trust building measures or M&E activities.

The area considered by the land use planning process is not necessarily identical with the project area. This depends on the situation and the role of LUP. It can be identified by natural criteria (watershed areas), by different interests in land use (areas or regions of use by beneficiary groups) or by higher authority objectives (administrative units). Additional amendments at a later stage to the size of the planning area are possible. The size of the planning unit varies: in LUP at village level, it ranges from an individual farm household up to the community.

In order to keep the demonstration effect of "start-up villages" in LUP as useful as possible, the distance between the villages should be sufficient. Experiences made in such pilot villages should not be imposed on neighbouring villages as "pre-fabricated" solutions.

Land use planners can come from different professional backgrounds. In addition to technical qualifications (e.g. training

in geography, agriculture or forestry, landscape or regional planning), they should have a good team spirit, the capability to organise, the capacity to moderate and a strong commitment related to the field of land resources management. Depending on the ranking of LUP in the project, manpower will have to be employed in the long or short term. The same qualification criteria apply to the partners. Frequently, they need an additional education as well as training measures.

In order to secure LUP financially, appropriate budget planning and administration are required covering the items personnel, logistics, planning aids, training and further education, trust-building measures, publications, public relations and travels.

Documents dealing with project planning and project conceptions having a LUP component should contain statements about the following aspects:

- position of LUP in the project;
- reference to the political development principles of the Federal
- Republic of Germany and of the host country (see Chapter 2);
- target groups of the LUP component (see Chapter 4)
- incorporating LUP into the time frame of the project (project phases, see Chapter 5.2);
- logistical and organisational structures for the LUP process (see Chapter 5.4);
- links of LUP activities to other project activities (see Chapter 6.2);
- definition of the planning area (see Chapter 6.3);
- personnel requirements and budget (see Chapter 6.4);
- framework of general conditions (see Chapter 7).

In order to ensure an adequate formulation of these contents, the participation of the target groups and the LUP specialists in project planning workshops (ZOPP: objective-orientated project planning) should be guaranteed. In this way, account is taken of both the participatory component of LUP and the technical requirements.

The role of land use planning in the project

Land use planning can have different roles. In some instances, it is the objective to systematise statements on the land use potential and to contribute to the awareness-creation of the beneficiaries. In other projects LUP is the decisive strategic process in which other project activities fit in. This should also be expressed in the project planning, e.g. by mentioning LUP at the result or activity level.

The question of the role and position of LUP in the project is going to be clarified during the project approach or the first project phase, e.g. related to the objective-orientated project planning. In this case, the project organisation is tailored to the needs of LUP by providing the appropriate personnel and budget.

There are, however, a large number of projects in which the need for land use planning arises only at a certain stage. This may be a new idea, or it has existed for a long time but never been articulated. It might happen when the orientation of the project has changed in order to consider more the projection of the land resources. The project organisation is then lacking important elements for carrying out LUP: the formulation of appropriate activities, budgeting for specific training measures, etc.

Difficulties arise, especially in a current project phase. As long as the project conception allows it, attempts can be made to implement short-term measures by employing qualified external specialists. If the need to incorporate LUP is recognised at the end of a project phase, it should be ensured that the LUP component is adequately anchored in the conceptualisation of the subsequent phase by arranging for the participation of appropriate specialists.

Incorporation of the land use planning component in the time frame of the project

Project Phases

Land use planning is a medium-term process which requires a careful preparation by creating awareness of the participating groups appropriately. Experience in West Africa has shown that it takes 1 to 3 years before a village land use plan is proposed and of long-term duration. One or more implementation proposals amend the planning. Generally, the plan is accompanied by the project during several project phases but should be continued independently by the partners once the

project is finalised. This results in the following specific assignments, in a project planned in four phases, for which a LUP component has been considered:

- first/second project phase: preparation of LUP; initial experiences with the implementation at local level (pilot measures) in a pilot area; creation of an information base for LUP at regional or district level;
- second/third project phase: evaluation of LUP experiences in the pilot areas; anchoring the pilot measures as well as elaborating a local LUP in the project region; drawing up superior LUP at regional or district level; integrating LUP into the legal planning framework;
- fourth project phase: handing over of LUP activities to the partners; organising training measures; plan evaluation.

Depending on the project type and the position of land use planning in the project, there might be considerable deviations from the structure presented here as an example.

Leaving Room for Adjustments

It is important to understand that there is a potential conflict between the iterative planning approach, a LUP principle required, and the project planning structure aimed at a regular balancing between the target situation and actual situation. This conflict should be taken into account when formulating results and activities for the project, and when drawing up operation plans. In addition, it should be considered in discussions about the project implementation within the framework of progress checks. However, the project should be given the necessary room in order to adjust the plan by justified changes. This depends on the experiences made in the planning process.

Logistic and organisational structures for land use planning

Depending on the role of LUP in the project, certain logistics and organisational structures are required in order implement the plan. Appropriate activities may be: "To support by consultation the process of organisational development of the partner resulting in its ability to initiate, accompany and support LUP processes" or "To encourage teams to support village LUP by using extension personnel from local NGOs".

The more significant LUP is for the project, the greater is the need to create such structures. If it plays a more subordinate role, it is more likely that the necessary expertise will be brought into the project from outside. This requires appropriate finances to be provided.

Documentation Centre

In order to make possible and guarantee the participation of stakeholders, the iterative planning process, transparency and an open dialogue, a documentation centre should be established. The structure and capacity of this set-up should ensure that important information, findings, agreements and plans are documented, processed and passed on in a form which is appropriate for the participating groups. It must be ensured that information will be circulated within a fixed timeframe. This work cannot be done "in passing" by a secretary. If the principles of LUP are taken seriously, a qualified person must be foreseen for this purpose. The work amount, however, depends on the scope and the significance of the LUP component in the project.

The general conditions

Like any other project activities, the implementation of LUP is strongly influenced by the framework of general conditions. This must be taken into consideration when developing realistic objectives for the project and when formulating assumptions and risks. In this process, an important tool is proposed: the "indispensable minimum prerequisites" and the "important prerequisites" (see Chapter 7). If major basic conditions are not fulfilled, either the objective of the project should be amended in general, this means formulating it in a more modest way or basic considerations must be made concerning the capacity of the project to be implemented. The examination of the general conditions should be conducted as an activity during project planning and operation planning before the plan is getting implemented. In this process, reference can be made to the results of other planning-related project activities.

6.2 Land Use Planning and Other Project Activities

Land use planning is not a project type. Therefore, it will never be a single activity of a project. A good co-ordination and complementarity with other project activities is of major importance regarding the success of the project.

In the following paragraphs some activities which are exemplary in their association with LUP are presented from the wide range of possible complementary activities:

Training

Training of partner specialists, village extensionists and participating groups is an important prerequisite for the successful implementation of LUP. Experience in LUP supports the realisation of certain training assignments, such as an increasing planning competence or environmental education. Here, the LUP process provides the opportunity to the option learning -by- doing .

On-farm trials and demonstrations

On-farm trials and demonstrations of sustainable forms of production and land resources protection measures, which are carried out simultaneously to the planning process provide valuable information and findings on measures, of which the spatial allocation is to be determined. Testing and dissemination of measures which are simple and inexpensive to implement, and with whose help improvements can be made within a short period (e.g. green fertilisation or "diguettes") create trust among the participating groups. This is necessary for the LUP process, which is actually designed for more long-term effects. At the same time, land use planning is an important instrument supporting the full effect of the measures promoted, since this results in a co-ordination with other measures and an application in neighbouring areas.

ROPP

Regionally orientated programme planning (ROPP) defines core problems and possibilities for action for regional development. As such, it also contains statements about the need for LUP as well as the prerequisites and the framework of general conditions for its implementation. ROPP will often be a working step previous to LUP. This has been the case for example in the **Las Verapaces project** in Guatemala. There, the decision criteria for the project planning were given: whether, when and in what way land use planning should be carried out.

In addition, ROPP provides spatial data, which can be useful for LUP and does not need be collected again. Finally, ROPP initiates a dialogue to be continued among the participating groups and relevant organisations. On the other hand, due to the land use planning process, strategic ideas in ROPP are getting transferred to the implementation level. For the land use planning process at regional or district level, ROPP offers information on a potential regional involvement. If a superior planning is lacking or if it is insufficient, ROPP provides

information on areas in which there is a need for basic directives. However, there are also cases in which existing small-scale LUP at regional or national level forms an important information base for ROPP. This is the case in the Department of Santa Cruz in Bolivia.

Measures aimed at Building up Trust

Measures aimed at building up trust can also contribute to an increase of the interest of participating groups in more complex planning processes such as land use planning. The following examples can be given: support in legal matters, support in conciliation of interests with large land-owners, support in negotiations with authorities or carrying out small infrastructural measures on a self-help basis. Land use planning provides a decision-making base for an appropriate allocation of these measures in the area. At an early stage, provisional statements should be made about potential directions of the development within the framework of LUP, in order to prevent that the trust-building measures are contrary to the objectives to be defined at a later stage.

M&E

Monitoring and Evaluation (M&E) as a tool in project controlling requires on the one hand information on the situation in the project area at a defined starting point (baseline) and on the other hand indicators which can be recorded easily and regularly. The LUP diagnosis provides important information on the natural resources in the area at the beginning of the project, and supports the development of simple but meaningful indicators. Indicators, which are also recorded within the land evaluation, can be used for M&E as well. The M&E system provides important information on the success of the implementation of LUP at local level, on the evaluation of experiences in pilot zones and for the plan evaluation.

6.3 Planning Area

Prior to or at the beginning of the diagnosis phase, the boundaries of the project area have to be fixed together with the participating groups and local agencies. In general, these boundaries are identical to the village and settlement boundaries of the participating population. However, an orientation should be the boundaries of the administrative body: district, rural district, region, cantonment or department.

Determining the Planning Area According to the Situation

The planning area is not necessarily identical to the project area. There are differing views on how to determine the planning area. For a long time, the watershed areas were favoured as the ideal planning areas for projects related to land resources management. In other cases, micro-regions or regions used by the target groups or their organisations were taken. Administrative boundaries such as areas of responsibilities of extension services and the boundaries of communities and districts can also be chosen.

In general, it can be said that the boundaries of planning areas should always be determined together with the participating groups and the partner organisation, depending on the situation and the role of LUP in the project *in situ*. In this process, the following criteria for reaching a decision are possible:

- Areas of responsibility of the local or regional planning agencies and/or of the agencies linked to the project;
- The areas used directly or indirectly (not only the cultivated parts) used by the land users and supported by the project. If the planning area is, for example, a watershed area or a village area, and the target groups living in the area also use fields, forest, pasture, wild plants and water outside these boundaries, the planning area must be extended covering also these areas;
- If a participating group represents an organisation which is already well structured, then the planning area must cover all those areas which are used by the members of such an organisation;
- In many countries there are already existing, decentralised administration units at department, district, community or other levels. In such cases, it must be examined whether the potential planning area is identical to the areas of juridiction of the related administration, in order to avoid the creation of parallel administrative structures.

In the context of land use planning, the planning area can never be limited in a rigid manner for all times. Given the dynamic character of LUP, the boundaries of the potential planning area can change. It can even be extended over the period of the various project phases.

Pilot Villages

It makes sense to initially enter into a planning area step by step. Thus at the beginning, only certain parts of a region will be covered. The start will be in pilot villages (also called nucleus or test villages). The aim is to test a procedure in some villages before a larger intervention starts. Examples or demonstrations can also be established with the intention to implement measures in the whole area but only at a later stage, after the end of the project, and with the support of partners or other donors.

The special will for co-operation and self-help expressed by the participating population, i.e. the land users, should be considered as an important and often decisive criterion for the final selection of the pilot villages.

Subsequently, it will be discussed with the village representatives in which units should be worked. The potential units for village LUP are:

- households;
- hamlets (settlement groups without their own administration);
- villages (with appropriate official status);
- communities (possibly several villages).

Positive experiences have been gained especially with units which are not defined geographically (watershed areas), but administratively. In this case, responsibilities, boundary lines and motivations are easier to clarify and incorporate. As a rule, "the village" as a unit is a very practicable pilot unit, under the condition that appropriate contact or planning partners can be identified at this level.

Selecting the Pilot Villages

Further criteria, which should be considered to select pilot villages are:

- The pilot villages or groups should not only be interested in co-operating with the project, but also in carrying out LUP;
- They should not represent a homogeneous group, e.g. only landless farmers, only livestock owners, only manual workers, only men, etc., but they should reflect the heterogeneity of the reality in the planning area;
- Strategic considerations should form the basis of the selection in order to be able to

a) achieve the greatest possible effects with the greatest possible number of target group families,
b) reach and support the greatest possible number of target group families, i.e. for example not start with remote areas,
c) use pilot areas for demonstration purposes to spread the project work over the whole region.

Example: Mali

In 1991, 26 "test villages" were selected in **Mali** for a **resource management project** according to the criteria of their capacity to represent the general situation (at national level). The following criteria were chosen:

- covering the most important natural and spatial elements and units;
- covering the major ethnic groups;
- covering all major socio-economic groups (arable farmers, livestock owners, forest users);
- non-neighbouring position, in order to develop the expected demonstration effect.

The most decisive criterion applied was the interest expressed by the villages in co-operating with the project. At the later stage, this turned out to be a partly deceptive criterion. Often, the "immediate" acceptance was a burden for later co-operation, because a relatively low ranking was given to it.

If the effect of a demonstration in the pilot villages is positive, then the villages, which are located next to the pilot villages, will be involved in the program next. As the experience of the project increases, villages, which are more remote, can be step by step included in the work. In this procedure, care should be taken not to mechanically transfer the experiences from the pilot villages. Villages involved at a later stage must not become only recipients of models and of pre-fabricated solutions to their problems. For each village, planning should have new, individual and location specific aspects. Process orientation means to use learning processes as much as possible.

Involving the "follow-up" villages, the demonstration radius of the pilot villages is extended. If there are large areas in the project region which are not covered yet, additional pilot villages are to be involved while intensifying the project activities. These in turn have to be surrounded by follow-up villages. Even the

last villages considered must proceed to the plan implementation; therefore this intensification should begin at the latest 4 years before the end of the project.

6.4 Personnel Requirements and financial Needs for Land Use Planning

The need for external specialists depends to a large extent on the significance of land use planning for the project. Only if the ranking of LUP is high there will be a specific, long-term specialist for this area. That person's assignments will rarely be restricted exclusively to LUP: typically, assignments will be taken on in moderation, organisation and co-ordination, co-operation, conception, transparent information policies and the evaluation of LUP experiences.

Short-term Specialists

In addition, short-term specialists will be used specifically for special assignments in LUP. This may be an advisor accompanying the process, for whom a series of interventions is planned at regular intervals. This kind of external specialist advisor is important, especially in process- and participation-orientated projects and components such as in LUP. It is to be recommended on the basis of positive experiences.

Other short-term assignments may be advising the project team on the conception of LUP, technically accompanying the working steps in the pilot villages, evaluating LUP steps taken and bringing in the special know-how (soil science, gender analysis).

National Specialists

National specialists are required to accompany the process in the village, to carry out special technical assignments and to include LUP into the official structures (approval, linking to higher planning levels). These specialists can be project personnel, partner specialists, members of governmental and non-governmental organisations or consultants. Often, national personnel must be trained for these assignments. This can often be carried during a joint learning process in practice. For direct activities at the local level, people are required who have gained the confidence of the village population. In the long run, the aim should be that all activities can be continued independently.

A good knowledge of the administration structure at all levels is a prerequisite for the necessary administrative implementation. Good relations to the local administration make it easier to implement the ambitious objectives of LUP. In this context, the relatively extensive documentation and information work, which significantly contributes to the transparency of the planning and implementation process, deserves special attention.

Demand for High Quality

The spectrum of qualifications of the external and national personnel required for LUP can be wide: agriculture or forest management, planning sciences, landscape and land use planning, geography, economics, agricultural economics, regional planning and many more. In addition to these technical qualifications, the project workers need to be highly motivated and to have team spirit. They should be interested in the topic and show an understanding for the complex context and other cultural viewpoints. These skills and talents must be defined, in addition to technical criteria, in job descriptions and profiles of requirements.

In this process the point is not only to have the longest possible professional experience, but the quality of knowledge, experience and personality. What is required is an interest in and a capacity for moderation, team work, organising complex working processes, preparation of workshops, a capability to motivate and delegate, but also knowledge in applied remote sensing, simple forms of topographical survey, thematic cartography and more. Specialists in LUP need to trust others and themselves; they should be able to listen, to be prepared to understand and to learn, and they must draw conclusions from this for the implementation.

Budget Planning

In budget planning (quantitative framework for new project phases) for LUP the following costs must be considered:

- personnel, including external specialists, costs for travels, daily allowances;
- logistics, including capacities for guaranteeing transparent information policies, documentation, etc.;
- planning aids (remote sensing, small instruments, drawing equipment, etc.);
- training and further education;
- measures aimed at building up trust and contributions to financing planning documents, partial implementation plans, publications, etc.

Usually, it is difficult to allocate costs for the staff, since it often carries out other activities or provides additional support to LUP. On the other hand, it is very important to keep sufficient funds for employing short-term experts for special requests in LUP and possible consultations to accompany the process.

The partner can have high personnel costs, for example when establishing logistic structures for land use planning and putting in place capacities to disseminate the approach widely. The costs for planning aids depend on the scope of land use planning. At local level, various maps and charts, aerial photographs, drawing equipment and other measuring instruments are part of the minimum equipment. At higher levels, GIS versions may be appropriate, just as satellite images may be required. A substantial cost factor is presented by training and further educational components. This applies to target groups, employees in community administrations or other planning agencies, NGOs as well as to the national project workers.

Land use planning does not necessarily have to be expensive. Satellite images and GIS systems are not always needed. The partner and the target groups in the course of time can share the costs of workshops, which were initially financed by the projects. In the long run, LUP measures should not have a subsidy character. In the field of personnel, it should be avoided to increase the public sector.

6.5 Materials and Equipment

The planning materials and equipment needed are often not locally available. In this case, the project must arrange to obtain them in due time. This fact should be taken into account, especially in the field of processing and interpreting aerial photographs (aerial photo-mosaics) or satellite images. It becomes even more difficult when new flying missions are required and flying permits have to be arranged.

In principle, the logistics available in the region must be explored and utilised. Prices, quality and delivery dates must be in reasonable proportion to the needs and demands of the project. The experience with the procurement must be documented (register of suppliers and advisors), so that both the project and the partner can refer to this in later project phases.

For carrying out land use planning at village level, expenses for the following working steps and related measures must be considered:

- visits to the village: travelling expenses, accommodation, materials;
- provision of services for legal consultation: travelling expenses, accommodation, materials;

- co-ordination and discussions with authorities, interest groups, NGOs and other projects: travel expenses, accommodation, documentation, maps;
- small projects, measures aimed at building up trust, pilot measures: materials, extension aids;
- supra-village co-ordination: travelling expenses, accommodation, documentation, maps, moderation, materials;
- documentation, drawing up plans, evaluation of the plans: travel expenses, accommodation, PC, maps, moderation, aerial photographs, drawing equipment, possibly GIS and satellite images, photos, miscellaneous materials.

7 Framework of General Conditions for Land Use Planning

This chapter deals with the framework of general conditions relevant to LUP. They are of a diverse nature and change constantly. Therefore, it is important to recognise and observe them. Any changes of the general conditions make it necessary to revise the previous plan and initiate an iterative planning process.

The framework of general conditions in LUP considers land law, the situation of the natural resources, the interests of the participants, the economic system, the equipment of the responsible organisations in terms of materials and staff, or the traditional systems of value of the target population.

The possibilities of Technical Co-operation-projects to influence these general conditions is often over estimated. Instead of trying to change it, it often makes more sense to find ways to adapt to it. When the general conditions are particularly difficult, attention should be paid to an exchange of experiences with other projects or organisations. It is often sufficient to use the legal framework and the scope for action, which are granted to bilateral projects in order to clarify the situation. It should also be considered to support the establishment of new legal regulations.

The framework of general conditions can also hamper the implementation of LUP. This is the case if:

- the political will for LUP is lacking;
- the binding character of LUP or securing rights of use are not guaranteed;
- there is no prospect of an implementation;
- there is no will for dialogue among the majority of the participants or
- the ecological scope for action turns out to be too narrow.

In such cases, the LUP process will not be started or current projects have to be terminated.

Although the framework of general conditions is not part of planning, it is closely connected to it. It influences the whole process of planning and implementation. It is permanently subject to dynamic changes. Changes to the framework conditions constitute one of the reasons why land use planning cannot be carried out according to fixed working steps. It is an iterative process allowing countless instances of backtracking, learning from experience and new findings. In order to take account of these conditions, continuous observation of the essential general conditions, as well as consider them in the planning process, represent an important task for LUP.

As an additional activity in land use planning, the framework of general conditions should be influenced if possible and appropriate. Nevertheless, a warning is given at this stage to overestimate such possibilities: it is better to deal with the conditions in a suitable and appropriate manner which is realistic and therefore meaningful (according to GTZ / Rauch, 1993).

The extent to which the framework of general conditions can or cannot be influenced by the project is depending on the case. To a limited extent, the implementation of a land use plan will always have repercussions on the general conditions. These can have also negative effects and must be considered from the beginning and avoided as far as possible.

General conditions vary in nature, context and country. They are composed of natural, economic, political, legal, institutional-, organisational and socio-cultural factors, which also influence each other. The following aspects are particularly significant for land use planning (see Appendix 6 for a detailed presentation):

Land law and land order: Uncertainty about land tenure and rights of use restrict the scope for action in decision-making by the land users. There is little willingness to make high investments for long-term and sustainable forms of land use.

The present situation concerning the natural resources: When resources appear to be intact, there is often little concern for protective measures. If resources are already degraded, often the funds are not available for carrying out measures to improve them.

Differences in interests specific to gender and age: Due to the existing system of splitting responsibilities in rural families, men and women, young and old people, often have different priorities concerning the planning of land use.

The economic potential of the (smallholder farming) population: The need for daily survival does not enable the poor rural population to invest long-term in improvements to resource management, unless this also leads in the short-term to an increased income.

Equipment of the responsible organisations in terms of personnel and materials: Without external support, many organisations are overwhelmed by their tasks in land use planning.

Traditional authorities and mechanisms of settling conflicts: Existing traditional authorities and mechanisms of settling conflicts are an important element in land use planning. External support is especially necessary when traditional mechanisms of regulation in the field of land use planning fail.

7.2 Possibilities of Dealing with the General Conditions

Improving knowledge of the framework of general conditions

Well-founded knowledge of the framework of general conditions sets the scope for action and finds the limits of LUP to be determined. The assumptions and risks in achieving the project objectives and results can be defined more realistically. They are particularly helpful in checking the potential for self-help. This knowledge forms an important basis for creating awareness and public relations work. In the long run, a precise analysis is a prerequisite for examining which of the conditions can be influenced and which cannot.

Some of the information required for this purpose will already have been collected in connection with other project activities. It is therefore available when starting the LUP process. If Regional-Orientated Program Planning (ROPP) has set up a comprehensive information base, it is also available for land use planning. Additional information specific to LUP will be only provided if the reasons for using it are absolutely clear and any involved costs are justified. The results of the studies serve the LUP process directly and can also influence the general conditions.

Informal Sources of Information

In addition to data sets and evaluations of existing materials and statistics, informal information and findings by key people are of major importance. Informal sources of information often has a higher clarification content, are more up-to-date and closer to the situation of the participants. Information of this nature -

e.g. through informal marketing structures - is gained less from studies than from direct conversations with key people. Thus, the knowledge is important for projects, but is nevertheless difficult to transmit to outsiders. It will often not be appropriate for political reasons to mention these sources of information in official project documents. This might easily give the impression that the project is working without a clear information base. The legitimation for using informal information and the necessary support of the project by its partner organisation are important prerequisites for dealing with the framework of general conditions in a flexible manner.

Even in the day-to-day life, all participants are continuously confronted with the effects of the general conditions, and act accordingly, consciously or unconsciously. This should be understood to be able to correctly assess the own actions and to create awareness. Ways must be found - e.g. in moderating discussion processes - to know and to use the experiences of participants in dealing with the general conditions. In this process it is especially important to deal sensitively with conflicts related to the general conditions, as it is for some participants often not possible to make an open and direct approach.

Creating awareness, encouraging concerted actions and public relations work

Spreading the knowledge of the general conditions enables all participants to a realistic assessment of the potentials and limits of land use planning. For groups, which have not received sufficient information up to this point, new possibilities for actions are opening up, in order to adapt their behaviour in an optimal way to the general conditions. An example can be given with the broadcasting of agricultural price information on the local radio, which can also be important for land use planning.

It will not always be a priority that people adapt their behaviour. It is equally important to effectively influence inappropriate general conditions, e.g. a better information base. Some measures can result in an improved handling or even change of the general conditions (empowerment). This is of major importance, especially when neighbouring groups are to be encouraged.

Incentives to change people s behaviour can be given by disseminating the results of LUP. Plans and documents are good advertising materials or argumentation aids. Projects are able to improve the situation of disadvantaged groups or create awareness among politicians for the protection of natural resources also due to their good technical know-how. This

happened, for example, by providing information on the situation of the American Indian population groups concerning land law, or on the risk for soil erosion.

The exchange of information with other projects and organisations on the nature and strategic handling of the general conditions is an important component of institutional co-operation. In addition, opportunities to influence and change the general conditions can be improved by co-ordination. For this reason, many projects support committees at regional level, which meet at regular intervals and represent different social groups and government organisations.

Consequences

The open discussion processes on existing patterns of behaviour and regulations usually have consequences. A problem is identified, e.g. why existing legal regulations do not have an effect, due to those being too rigid and do not fit into the regional situation. This can be the case when there is a general limit on land use, because of the slope; or the political will for implementation is lacking. It is possible to use political pressure on the decision-makers, aiming at legal changes or keeping of existing regulations. This can be done through press reports on the appropriate meetings. The participants are encouraged to change their behaviour and might consider, for example, the introduction of new agricultural techniques. Even traditional regulation mechanisms can be revitalised and developed further.

Example: Zambia

In the **Siavonga Agricultural Development Project** meetings were held with chieftains and their village elders as a reaction to the lack or loss of local authorities and mechanisms of regulation related to land use. These meetings were successful in creating awareness and mobilisation. It can be expected that traditional forms of regulating land use will be reinstalled, as will traditional forms of land resource management with appropriate changes in the behaviour of the land users. The major points of discussion were:

- What is the present situation?
- How did we cope with similar problems in the past?
- Why does that no longer work?
- How can appropriate structures be renewed or established?

Using the existing legal framework

In addition to developing new mechanisms and institutions, many projects aim specifically at maintaining existing laws (agricultural reform, nature conservation, etc.), in order to influence the general conditions in this way. Authorities are encouraged to become active in implementing laws concerning their field of activity. Strategies for this are as follows:

- Support by the project for appropriate requests from the population. Often, stakeholder representatives only get access to the authorities thanks to the project;
- Empowering representatives of authorities and of target groups to deal with activities which are necessary to enforce laws;
- The project finances or temporarily fulfils tasks, which are actually those of the government. Such financial support should, however, have only a temporary nature. Taking on additional tasks is only appropriate if these are taken back by the institutions responsible after a short time;
- Other incentives such as further education, supporting the interests of the organisation or encouraging the establishment of independent means of control;
- Lobbying and public pressure, as far as possible by different people and groups according to agreements fixed in the project contract.

Example: The Dominican Republic

The project **Rational Savannah Cultivation (INDESUR)** encourages the granting of land titles to smallholder farmers, as legally provided for, in the following manner:

- There is a permanently contracted attorney who takes the necessary legal steps. Her assignment includes the support and regularly reminders to the various government authorities about the land reform authority assigning the claimed land, regular checks on the status of the plots and the accompaniment of the entire process, right up until the deeds are finally granted;
- The target group and the project team take on tasks which should in fact be performed by the land reform authority: the community and neighbouring communities in question establish the related boundaries; research at various land registers in order to investigate the plots in question and their legal status, and draw up a list of potential users. The land reform authority receives an appropriate documentation

together with the application made by the participating population.

- Calling in willing and influential persons and organisations so they can use their influence appropriately;
- Frequent reference by project personnel, and occasionally by the German Embassy, concerning the fulfilling of the project agreements to various government authorities;
- Pressure by the target group presentation on the land reform authority in the form of "courtesy visits" and specific information to the public media about the state of affairs and delays;
- Logistical support to the land reform authority.

Participation in the process of drafting laws

An important opportunity to influence the general conditions is to participate in initiatives to create new laws and regulations or to repeal those which are particularly damaging to land resources. In this process, projects can take on the following tasks:

- expressing the need for legal changes using public relations work and lobbying;
- evaluation and presentation of experience in the project which are often the result of the creative use of the scope for action;
- direct participation in compiling and discussing parliamentary bills. This can be achieved either by projects being active simultaneously at different levels or by different projects complementing each other.

Using the scope for action

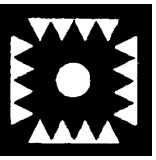
It is not only the case that the general conditions define the boundaries for action. The scope for action may also open up, allowing at least a temporary share of limited actions. This is the case when people having a particular interest in land use planning occupy key positions. Surprisingly, even a political boom can lead to an increasing demand for LUP.

Projects of the Technical Co-operation almost always create a certain amount of space for action. When a project is getting more and more accepted, it plays a role in the local power game, which should certainly be taken seriously. In this way, the

political weight of a project can lead to changes in the rules of the game: groups which have been disadvantaged are now recognised and accepted. Such opportunities should be used, even if what is achieved in this way is difficult to incorporate and cannot be transferred to neighbouring regions. It should, however, also be noted that projects might easily and unpurposely be drawn into local conflicts of interests and it might be taken advantage of by certain power groups.

Projects can become active especially when only certain social groups are affected by a limitation of the opportunities for action. Implementing specific measures, these groups can be encouraged to overcome bottlenecks, for example by creating markets using specific advertisement campaigns.

Scope for action is also getting available in unclear legal situations. This happens particularly in connection with a non-compliance with existing laws, the lack of clear regulations on implementation and in situations where insufficient institutional capacity is recognised. The population therefore develops informal solutions - such as the establishment of illegal settlements on land close to conservation areas - which are not necessarily in the interests of all parties. In such cases, a project can work together with the population to develop new mechanisms of regulation and institutions, such as the creation of co-ordinating committees, already mentioned before. In order to avoid new conflicts, a procedure is appropriate respecting traditional, existing decision-making mechanisms. It includes also agreements with local government representatives. Parallel structures, which neglect the state structures in certain areas or even avoid the contact to them are not recommended. This would weaken the state structures. In addition, there is a considerable risk for the sustainability of the results based on these structures. It should be worked towards a situation in which ideas and proposals should be discussed widely, socially recognised and used as a model for other legal reform projects.



As far as the economy is concerned, the scope for action emerges from taking advantage of co-operation in order to change economic structures in the interests of the target groups, for example the support of structures to overcome a local monopoly.

7.3 Limits in Practising Land Use Planning

The extent to which land use planning can actually contribute to solving problems depends on many prerequisites and conditions. Some of these prerequisites can actively be created by the project. There are, however, limits to the use of LUP. If a certain minimum of prerequisites does not exist, and cannot be created by the project, it must be considered to give up the idea of land use planning entirely. Freedom of speech and freedom of assembly are prerequisites for participation, publicity and transparency; under a dictatorship, these prerequisites will hardly exist. Nevertheless, the space available must be checked out and, if necessary, at least any possible contributions to problem-solving by LUP must be checked out. If there are traditional mechanisms of regulation in place which control the planning and co-ordination of land use in a satisfactory manner, then it is not necessary to practice land use planning.

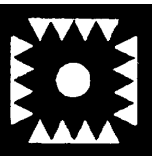
In General

It makes no sense to practice land use planning if:

- the political will is lacking;
- it cannot be guaranteed that planning will have a binding character
- there is no guarantee for the implementation of the plan;
- other problems have priority to be solved e.g. refugee
- problems;
- unfair land distribution practices;
- natural catastrophes;
- general conditions which cannot be changed do not allow LUP,
- e.g. if in an ecologically extreme climate zone (desert) the
- available scope for action is too small ;
- the political or security situation allow neither the freedom of
- speech nor the freedom of assembly;
- a minimum security for long-term rights of the plots in the
- planning area is not guaranteed and cannot be established;
- there is no possibility of raising the willingness in the population to
- talk about questions and/or problems concerning land use;
- the existing institutions and organisations have very rigid
- structures which allow no changes

Practising land use planning in a project of the Technical Co-operation is not appropriate if:

- it is impossible to create the prerequisites for LUP at the intervention levels of the project, e.g. due to -economic processes in the world;
- it is beyond the financial or personnel capacities of the project to implement LUP;
- LUP requires expenses, which are not appropriate (cost-benefit-ratio);
- LUP with the partners is not feasible or is politically inopportune.



8 Prospects

The discussion process on land use planning in developing countries does not stop with the publication of these guidelines. The concept should be developed further to become a flexible methodology. It is through its very dissemination for which GTZ strives and the awareness creation of a wide circle of people. So it can be ensured that these guidelines do not remain an abstract book. The document gives opportunities to discuss, to criticise, to question and to formulate doubts. The results will give new inputs to both the concept and the further development of land use planning.

The working group WGLUP will continue to be active and to be available as contact partner.

An important step in this direction is the evaluation of experiences made with land use planning in the partner countries. This will lead to a collection of materials being drawn up on country and continent specific experiences. There is already a suitable contribution for Asia, which is published within a separate volume.

The work will continue on special forms of planning for ethnic groups which negotiate binding agreements and planning without written documents, for areas with indigenous population, for zones where security is endangered, for peripheral and economically marginal areas and for improving city-country relations. It is important to improve the tools with which non-formal information can be used. Land use planning should be linked horizontally and vertically to other types of planning and integrated into development planning at local and regional level. In this process, it should also be linked to national and multi-national resources management programmes (e.g. CCD), to the strategies in the field of land resources management and to topics such as land law.

The next objective of WGLUP is to compile a "tool box" in which possible procedures are presented based on given assignments of LUP. This includes the evaluation of land use potentials and the adaptation of tools and techniques, such as GIS or PRA. Work has been initiated on compiling training modules for LUP, with the result that there is already a demand for the appropriate services. The goal GTZ is striving for is an exchange with other institutions and projects at the conceptual level of LUP.

Finally, it is the hope that the reader of this book will have a better overview of land use planning as promoted by GTZ. Suggestions are made for its practical use in projects. If there is an interest in a further conceptual development, the members of WGLUP would appreciate to receive contributions to the discussion and reports on experiences.

Appendices

Nature as a guide in the search for planning contents? Which sources of knowledge do the planning contents come from? Is it only the result of a negotiation process? Is it free of conflicts and does it reflect the consensus of the participants, the least common denominator ?

Several sources of knowledge play a role in the planning process. These are not only scientific findings and results of evaluating cause-effect relations. They also reflect the experiences of both the technicians and the local population; they also reflect the laws of nature and biological processes. The stability of an eco-systems is guaranteed by complementary interrelation among many heterogeneous factors. E.g. the tropical natural forest owes its stability to the interconnected relationship between flora and fauna.

The content of the plan is based on models: on models of the nature, on political, cultural, scientific and technical models as well as on the actual conditions themselves. The objective of land use planning is to ensure and improve the capacity of an area to function as living and production area. Consequently, we must first of all make use of the elements and mechanisms of the nature, and complement them by technical interventions. This complementation can involve considerable costs.

In the opinion of various ecologists, the vast majority of areas which are presently settled by people were in a state of climax before the settlement started. They, too, would have changed in the course of time, even without a human intervention. The state of climax was characterised by a dense vegetation, at least by forests of differing formations. The following factors stabilised the ecosystem:

- The soil was, to a large extent protected by shade;
- The soils were not entirely heated up and dried out;
- There was higher rainfall and a better distribution;
- The rainfall infiltrated more slowly into the soil;
- The soil was well structured due to good tilt, good rooting and soil fauna;
- There was a permanent supply of nutrients;
- There was a regeneration of vegetation "by itself" (climax).

The interventions by humans, especially the clearing of the vegetation, led to a severe imbalance and to the beginning of soil degradation of varying intensity. However, by adapting land use to the present conditions, the population could avoid major imbalances and the destruction, or could keep the degradation at low level.

If in tropical and sub-tropical regions, future land use planning would be based on the conformity to the laws of a natural forest, this can lead to more stable soil conditions again. By including agro-forestry components, quasi-forest conditions can be created in fields used for agriculture.

Plan contents nevertheless do not only refer to vegetation, soil coverage and the cultivation systems adequate for the location only. It also considers the social and economic requirements, expectations and interests of the affected groups of the population. In general, agricultural use is needed to survive. In land use planning it should be promoted a conciliation of interests or areas when land use is getting restricted in some areas and land use (including intensification) is getting extended in other areas. If a considerable population growth can be expected in the planning area, additional areas for agricultural use have to be identified in the plan, but not necessarily developed at this stage.

The focus of the plan considers primarily the concertation, i.e. the conciliation of interests and the sustainable settlement of conflicts. This means not only short-term solutions to conflicts, but also the institutionalisation of negotiation mechanisms, with the participation of the responsible authorities. Settling conflicts means not only dealing with the local parties, but also dealing with authorities, with laws (e.g. forestry law), with the agricultural industry and, with the market. Especially when there is a competition between the cultivation of cash crops and subsistence products, co-operative relations with the processing or exporting private sector are appropriate as a component of the plan.

Similar co-operative relations with authorities are necessary when an area is no more suitable for agricultural use. Often the concerned land users must be resettled, or they have to migrate to areas with non-agricultural use.

Land use planning always interferes in the rights of individuals, communities or the state. Especially for this reason, the following two questions will be considered:

How can the legal security for using land resources be improved? Which basic legal instruments are needed for implementing land use planning?

Historical aspects of the legal development

Formal and informal rights and legal norms which regulate the use and the property of land resources are accompanying components of the historical and socio-cultural development of social organisations, power structures and cultural fields. First, the development of the European nations and the division of the world into three power systems as well as the colonisation phase led to a situation where:

- the law was increasingly developed and applied uniformly to the entire area of the state;
- the law primarily regulated the relations between people, and to a much lesser extent those between people and the use of land resources;
- the traditional socio-cultural and socio-legal links between land users and the land resources at local level was minimised in favour of central state categories in the various special laws such as land law, irrigation law, inheritance law, hunting law, forestry law, etc.;
- along with the specialisation of legal fields went the specialisation of the administrative structure and to split up natural resources institutionally into more and more sub-systems;
- former colonies took over the legal systems of the colonial powers;
- indigenous common law can no longer make a sufficient contribution to the legal security, even where it was tolerated or accepted as legal practice; this was due to the erosion of traditional, decentralised power structures and authorities;
- for this reason, the practice in many cases differed to a large extent from the official legal status.

On the other hand, the more recent development of the system of relations between the law and the use of land and other

natural resources is characterised in many developing countries by the following tendencies:

- the realisation that in the socio-cultural context common law cannot exclude modern land and water laws, depending on the situation, but rather complement (multiple tenure systems);
- the realisation that control of the laws on local use of land and water must always come from decentralised structures;
- the realisation that granting title deeds does not automatically lead to more legal security and so an improved access to resources (credit, etc.). Above all, it also requires supplementary structures such as, for example, a functioning land administration;
- the realisation that in order to implement Agenda 21 (Rio de Janeiro, 1992), the conventions (e.g. the convention on combating desertification) or the national environmental action plans, legal instruments must be harmonised and developed in the sense of supporting sustainable development.

Exemplary principles of land law

The legal, social, ecological and technical disciplines in the structure of relations of land use are fundamentally linked and complementary. In this system, legal instruments are intended to regulate between:

- land user and land user;
- land user and land resource;
- land user and institutional structure;
- institutional structure and land resource.

In this process, the legal basis for land use is derived from various sources. The main sources may be:

- constitution: definition of the term property , social functions of land;
- implementing national agreements which have legal status: Agenda 21, Convention on Combating Desertification (CCD);
- national land law and tenure systems (Land Act, Agrarian Law, Basic Law): legal principles for implementing national

soils policies, e.g. Basic Agrarian Law (Indonesia), Basic Land Law (Tanzania);

- sectoral laws: e.g. Town and Country Planning Act (Botswana),Soil Conservation Law (Rwanda);
- common law:
  1. Formal regulation within the framework of the national land law such as, for example, in Indonesia: The Agrarian Law is dualistic regarding to the validity of the ADAT (common) law, existing beside the Agrarian Law.
  2. Informal regulation on the basis of local socio-cultural and socio-legal traditions.
- administrative actions of the specialised administrations.

Criteria

The major principles of land law for supporting land use planning can be exemplary in covering the following criteria:

- - legal security: common law and modern land law have the same legal status and are treated equally by the legal system;
- flexibility: land law should form a regulatory framework and not a rigid legal system which attempts to regulate every case and all details;
- social function: all rights to land are different from general economic goods and should also consider the social functions of land;
- ecological function: Agenda 21 with global and local function;
- economic function: for example, land utilisation charge to guarantee self-supply, or land tax;
- transparency: rights to land should be transparent and public. It should make an efficient administration of the land possible;
- bottom-up control: systematic involvement of those affected by the regulatory work of land law should be a keystone of land law;
- forming a consensus and balance of interests during interventions: constitutes a prerequisite for socially tolerated implementation of a land use plan.

Land law as a tool of land politics

Ideally, land law provides legal tools for implementing socially, economically and ecologically orientated land politics within the framework of political priorities. Usually, consistent land politics can, however, not develop, because they are hampered by diverse and conflicting interests, pseudo-economic and technical constraints, contradictory laws and political fluctuations.

In some countries, aspects of land politics which are relevant to land use planning are embodied in legal regulations. Some of these aspects are mentioned below:

- safeguarding areas which are highly suitable for agricultural use (priority areas) *vis-a -vis* other forms of land use;
- safeguarding corridors (buffer zones) for use as and linking to pasture land;
- extra charges made to protect the soil in areas with erosion risk;
- obligations on cultivation to ensure self-supply;
- emphasising the social function of rights to land;
- fixing upper limits for land tenure by individual owners (especially in irrigation areas);
- pre-emptive rights for the state.

Implementing the Convention on Combating Desertification (CCD) and carrying out environmental action plans require an improvement in the legal basis for using land resources.

Forms of land use and land tenure

Land use planning has varying economic and social effects, depending on the forms of land tenure (legal status of a piece of land) and the present land use. Restrictions on the use of arable land possibly have different effects and consequences than on pasture land or forested areas. Also, differing effects must be expected, depending on whether the land in question is privately owned, state-owned or communal land.

It is important for those participating in the planning process to recognise these dependencies and connections, and to take into account the potential effects. Land use types such as arable land, pasture, forested areas, etc. should be put in the context of land tenure categories such as privately owned, state-owned, community-village-owned, communal land, mixed forms, etc.,

which may all be used both privately and rented out or used informally.

Multiple land use **Example**

- arable land as primary land use
- leguminous trees as fodder plants along the development
- use as secondary pasture area after harvesting the main crop.

Multiple land tenure models **Example**

- common pastoral use of private arable land after harvesting the main crop up to new sowing period; or
- common keeping of sheeps in private small-holder rubber plantations (Sumatra).

Highly developed and flexible land use-land tenure models, i.e. combination of different land use types (arable farming, keeping livestock on pastureland, forestry, etc.) on the one hand and land tenure forms (private ownership, state or communal land, etc.) on the other hand are certainly existing at local level. Which form is taken in what case depends on the availability of water and the annual cultivation calendar. However, due to their complexity, they are often not understood by outsiders, and their potential is under-estimated.

Especially in buffer zones and dense rural areas, as well as in coastal zones, land use planning depends more and more on innovative forms of land use-land tenure models. This nevertheless requires that the participants have a basic understanding of dealing with multiple land use-land tenure potentials.

Appendix 3: A Brief Profile of Regionally Orientated Programme Planning (ROPP)

The starting point for ROPP is always a defined project. This can be a project of the development co-operation or a specific assignment (e.g. the establishment of an irrigation system) of an authority or non-governmental organisation. Planning serves to identify strategies and activities to achieve the project goal with a medium to long-term prospect. In this process, however, it is not only those activities realised by the project which are taken into account. Also, those supporting measures which are appropriate and necessary in the context are to be determined, such as family planning or the creation of non-agricultural jobs in a project which actually aims at improving the management of land resources. Thus, ROPP is an extended project planning which has a longer time horizon and offers to the project planning a framework and decision-making criteria. At the same time, ROPP can be seen as reduced regional planning. In contrast to the overall planning relevant to the area, it is restricted to those sub-areas which are relevant to the project goal. The limitation of regional LUP arises from the subject of planning, since ROPP is not tied to the subject of land use.

Field of application

The field of application of ROPP is not at local, but at regional level. Planning results show guidelines for the future development of a region with respect to a certain project goal. These guidelines require further details defined by the project and operation planning with respect to its implementation. Statements presented in maps only are not sufficient. Statements on financial and time requirements indicate ranges and approximate values. ROPP is a strategic planning, not implementation oriented planning.

Participants

Those participating in ROPP should be all organisations which are relevant to the project and all those groups of the population which are affected by the actions of the project. This can be achieved by group-specific workshops - such as conducted in the project ILE Los Llanos (Argentina) - or by a mixed planning team, which includes representatives of the rural population and of institutions, as done in the project LRE Ichilo-Sara.

Implementation

Some of the measures are carried out by the project itself. In this case, ROPP serves to support project planning. The remaining activities are passed on to financing and implementing agencies. In this process, ROPP documents should be composed in such a way that project proposals emerge from them easily, which than are addressed to financing organisations. The participation in the planning process of as many organisations and social groups as possible makes them more aware of the planning goals. People will more easily identify themselves with the planning results and take on assignments in the programme. This is where ROPP serves public work and helps to acquire donors.

Necessary data and information

ROPP is not a regional data base: this is where excessive expenses are often involved. The aim of ROPP is not to list figures on all possible topics of regional development, but to answer important questions:

- Which processes have led to the present situation in the region?
- What is the probability that these processes will continue in future?
- Which influences come from neighbouring regions to the region or what influences does the region have on neighbouring regions?

Information should be gathered and analysed in a participatory manner. Thus problems and needs are identified on the basis of a discussion on the historical development in the region and possible scenarios for the future. In this way, the view to cause-effect relations is not shifted by momentary needs. Above all, data and information should help to develop simple statements about cause-effect relations: "Because the land users have no security of their land tenure, they are little interested in sustainable production." Or "If the citrus cultivation will be extended, marketing problems can be expected."

What is important is that a common understanding is achieved with the participants on the basis of their experiences. A proof of the statements is not, however, necessary.

Presentation

ROPP should be presented in such a way that all participants can understand and reproduce the planning statements. In this process, it is not so much the scientific penetration of the statements which is a decisive criterion but the proximity of the argument to the population's situation in life. This means, however, that the statements in the plan can be very complicated for certain situations. Problems arise when the readers, with their personal experience, cannot identify themselves in the text. This often happens due to lofty speech and the use of strongly abstractive data (average values, complex matrices). In contrast, rediscovering their own situation in life in the plan provokes positive reactions: "That's us! We experience that every day. And so that is connected to other things."

Introduction

What is understood by mobile or pastoral keeping of livestock is a form of economy or a form of living as described below for mobile groups whose existence is based entirely, or at least mostly, on keeping cattle, irrespective of the degree of mobility. In this process, the terms pastoralism, nomadism and mobile livestock keeping are used synonymously. The different land use forms of mobile livestock keeping in place at present are the result of adapting over centuries to changing general conditions. These are in the process of change today, more than ever, in many arid and semi-arid regions of Africa.

Population growth and sedentarisation have led to a situation where until recently, rural regional development in arid and semi-arid regions concentrated above all on expanding and increasing arable production. This involved, above all, extending areas used for arable purposes, and developing connected, largely stationary keeping of animals, which thereby went against mobile livestock keeping. The fact that arable farming penetrates into areas of mobile livestock keeping, and given the additional changes in the socio-economic field, the result is competition for resources, right up to eviction of nomadic cattlemen. Existing tensions are increasingly being vented in bloody land use conflicts.

Keeping livestock in marginal locations which have an annually and seasonally varying biological resources requires mobility. However, as can be seen from relevant literature, traditional forms of mobile livestock keeping are being more and more reduced. This is mainly caused by:

- state sedentarisation policies;
- restrictions to the seasonal balance of fodder by competition for use and eviction from favourable locations in traditional dry and emergency pastures;
- repeal of old grazing rights due to nationalisation and re-privatisation;
- restricted mobility as a consequence of drought and security problems.

Key resources such as seasonal pasture areas in the dry season (which are often flooded lowlands in the wet season) are increasingly being used for arable purposes. The fact that arable land is penetrating into areas of mobile keeping of livestock is detrimental as a whole to the opportunities which the animals have to migrate, and thereby affects the herd management. Even the trend of restricting the timing or function of land use rights up to exclusive land law makes it difficult to integrate mobile forms of keeping of livestock in land use planning processes in arid and semi-arid areas.

The significance of mobile livestock keeping

Extensive pastoral land use in the form of mobile keeping of livestock is dominant in the arid and semi-arid regions of Africa. About 10 to 15 million people live and produce on about 13 million square kilometres of these regions with about 500 million head of cattle of various types. In addition to the mobility of the herd, the main characteristics of these systems consist in the fact that:

- land resources use is based on annually regenerating biomass;
- pasture lands which mostly have low production are used jointly;
- mutual access to strategic resources such as water, pastures rich in nutrients, salt licks and reserved areas is guaranteed;
- strong reciprocal relations exist between pastoral operations and households;
- there is a high degree of flexibility in management decisions.

Many national and international development organisations consider the mobile keeping of livestock to be an anachronism and therefore a symbol of backwardness. This is despite the fact that until now, no scientifically or ecologically justifiable alternative has been developed for the population living there, and migratory keeping of livestock continues to be the economic backbone in dry zones and a main source of income for the state.

Whether the mobile keeping of livestock as a form of economy and a form of living has any future depends very much on the attitude of those affected towards their own traditional strategies of survival, and on the general political conditions.

In the last few years, there has been a re-orientation process within the ecologically orientated science and in some of the development planners, a process which recognises mobile keeping of livestock as the only sustainable form of land use for the major part of these regions, and considers it to be a main long-term branch of the economy in these regions.

Land use conflicts and marginalisation of traditional mobile livestock keeping

The present situation of land use in arid and semi-arid regions is a result of processes which were initiated in colonial times. The consequence was increasing decay of the traditional social structures and production systems, a process which was not only continued, but even intensified, by independent governments. The appearance today of degradation of vegetation and soil due to unsuitable land use forms can mostly be traced back to this process.

In many parts of arid and semi-arid zones the continuous population growth and the catastrophic consequences of various periods of drought intensified land use conflicts amongst pastoralists and between pastoralists and arable farmers. Mono-sectoral promotion can be cited as an example of a typical conflict today between arable farmers and mobile keepers of livestock, such as the increase in plant production (groundnuts, cotton, etc.). This gives rise to processes of differentiation and displacement in which the mobile keepers of livestock usually come worse off. The main reasons for marginalising pastoral groups are politically historical and ethnically cultural, and constitute the expression of a socio-economic change which has pushed these groups to the edge. This has now been described by many authors and has also been documented in UNCED Agenda 21 and in the declaration of the conference of Praia (1994) on land law and decentralisation in West African Sahel countries.

In this context it is worthwhile to mention that there are a few isolated groups of cattlemen - for example in the North West of Egypt - who have succeeded, due to an intact social system, in having their interests and needs listened to and recognised by state institutions.

Even within the sphere of mobile keeping of livestock there has been a radical change, since nowadays all groups are competing for land resources. So-called "new livestock keepers"

(traders, state officials) are investing their money in cattle herds and making an appearance as users of resources in communal pasturelands. As a rule, they have no interest in determining pasture or land use rights. This creates additional conflict which, however, is seldom a burden to those who cause it, since they are influential.

In many West African countries land use conflicts are formally regulated by land law. However, this often does not correspond to reality or to customary rules of land use which include the rights of cattlemen. Following independence, land reforms were enacted which only recognised the principle of validation of arable farming. According to this process, cattlemen who do not deal with farming are excluded. Mostly, they do not have the organisational coherence and the political power to oppose such rulings.

Traditionally, the mobile keeping of livestock does not compete with arable farming, but creates competition where the environmental conditions (rainfall) no longer make any other form of cultivation possible. In the context of sensible use of land resources, arable farming and mobile livestock keeping should complement each other.

From the point of view of protection and management of land resources, mobile keeping of livestock can constitute an important element for the ecological stability of a region, as in principle it only uses what regenerates annually, depending on the rainfall.

Positive examples of mutually beneficial interaction between pastoralists and arable farmers exist above all in areas of work exchange, manure economy (by using cow manure to improve the fertility of the soil) and possibilities of exchange. Traditionally, a symbiotic relation between both groups has developed in many places, even if it is already noticeably disrupted in many regions by the failure to adapt agrarian and development policies. From the point of view of optimal land use planning, it would therefore be most welcome if the advantages of integrating the different forms of land use by political consultation and measures of rural and agricultural development were to come more to the fore.

Within traditional structures, conflicts can be settled very effectively, either directly by the affected parties themselves, or by mediation between the political leaders of both groups.

Measures for settling conflicts in land use planning can be carried out only by creating awareness among the local population and by fair participation of all the groups affected. This also requires active and real participation by cattlemen who, as is well-known, are difficult to reach, due to their mobility, and to include in forming a consensus.

Approaches to land use planning focused on mobile livestock keeping

The repeal of clan rights and the declaration of the entire pasture land in almost all regions as open and free state-owned land has contributed considerably to the degradation of pasture lands in many arid and semi-arid regions. The same applies to the weakening over decades of the legal position of local decision-makers and authorities who have precise knowledge of mobile systems of livestock keeping. The weakening process ensued in favour of a centralised administration which partly pursued its own interests (e.g. arable farming and agro-industrial irrigation economy) and has distanced itself greatly from the local problems. By an orientation towards short-term economic interests, this led to carefree use of land resources, right up to the point of its destruction in form of desertification.

Within the context of these guidelines, particular importance is given to encouraging local and regional institutions to settle existing land use conflicts in which both the mobile cattlemen, farmers and other groups are represented.

What is important for a successful implementation of adapted land use systems focused on pastoral livestock keeping is the extent to which the local or affected groups can or wish to actively participate in implementing the land use programmes. The success depends just as much on the flexibility of the bureaucracy and the will of the state to enforce the rights of the pastoral groups.

As has been shown in many examples given in these guidelines, land use planning has been until now restricted more or less to village boundaries only. The participation of all user groups in areas used for pastoral farming does, however, require greater reference in terms of the area. Here, the purely territorial approach must be supplemented by an approach which considers the social groups and the safeguarding of their rights to use the key resources. In this context, the uppermost goal must remain the flexibility of a land use system. No rigid

regulations can be introduced; rather, the point is to strengthen decision-making autonomy at the various levels. What is required is not rigid land use plan, but an understanding of present land use aspects by the participating groups. The various and different claims must be negotiated on the basis of accepted principles and regulations. Land use regulation or planning must allow the necessary local flexibility, depending on rainfall and the stage of vegetation.

The pre-condition for each package of measures is the participation by mobile groups of cattlemen in rural development process. First of all, the question must be examined of where, in the view of the mobile groups of cattlemen, the bottlenecks and alternatives lie for their pasture/land use systems. Also, the possibilities and necessities of intensified integration of livestock keeping and arable farming must be examined, especially with reference to the ecological, ethnic and socio-political conditions. Furthermore, the pastoralists must be advised on their land use rights and their organisational involvement in land use planning.

Summary and prospects

To summarise the evaluation of the land use problems in a rough outline in the context of mobile livestock keeping in arid and semi-arid regions of Africa, the following aspects should be emphasised: The mobile keeping of livestock will continue to be the best-suited form of land use in arid and semi-arid regions of Africa. Nevertheless, given the existing population pressure and the increase in cattle herds, there will be additional shortages of land resources, leading to processes of eviction. In addition, the consideration of pastoral groups and their rights will initially tend rather to aggravate the existing land use conflict.

In order to achieve long-term improvements, mobile keeping of livestock must be recognised as an adequate and adapted land use system. The cattlemen must be actively involved in the approaches and the concepts of land use planning. Only in this way the needs and the ecological advantages of mobile livestock keeping can be taken into account in a sustainable way. Carrying out such measures requires the pastoralists to be sensitised and given suitable advice as to their land use rights. However, this approach is only promising if it is understood as a participatory process and implemented as such.

Problems do exist where responsibility for using land resources has not been clarified. Present use of resources is not known, nor are traditional rights recorded. The point here is not to save tradition for nostalgic reasons. It is rather the case in many regions of Africa - due to the lack of alternatives to economic development - that one simply cannot afford to disregard the economic and ecological potential of the mobile keeping of livestock.

Appendix 5
Example of Land Units and Maps

Phase 1: Compiling land units

A well-proven method of recording the natural potential of the planning area is to work out land units, i.e. areas with homogeneous potentials in a map. Initially, this means to roughly divide the planning area into areas with:

- similar topographical features: e.g. plain, hilly, mountainous;
- similar edaphic features: e.g. sandy soils, organic soils, cohesive soils (loam/clay), rocky, stony or mixed soils;
- similar vegetation cover: e.g. denuded, open bush, degraded forest, primary forest.

Examples of identified land units are:

- plain arable land on sandy loam soils and peripheral tree vegetation;
- open, almost level flat areas of sand and shingle with sparse grass-shrub vegetation:
- wet valley terrain on predominantly organic soils and a low grass-shrub vegetation;
- slopes covered by degraded forest on stony-clay soils;
- river meadows on partly sandy, partly organic soils with medium-dense tree stand;
- dense secondary forest on loamy soils on slightly hilly terrain;
- open, level grassland on sandy soils with single high trees;
- dense primary forest on humus-loamy soils of low depth on almost level lowlands.

In general , it is not difficult to record and name (using local terms!) the local land units in discussions with the village population. The result will be documented in a descriptive table which contains the main details of the potential in the unit.

Phase 2: Discussing the possibilities of land use and landscape damage

Often, there follows an extended discussion on the options for using each land unit. This discussion is the key to sensitising the land users, the technicians and advisors concerning an improved use of the local land resources to be planned at a later stage. The initial step is of general nature and does not yet refer

to individual plots or operations. It allows the land users to talk about the landscape damage, and gives them the chance to think about possible causes. Landscape damage and instances of misuse are now also added to the table mentioned above. The use of aerial photographs and of terrain walks is extremely helpful and establishes a discussion on a consolidated and verifiable basis.

During this verification process, it is useful to locate the mentioned landscape damages on the map "landscapes" and thereby to compile a proper "damage map". This map will be useful for later discussions about measures to be carried out.

A few examples of the contents of such a map are mentioned below:

- severe surface erosion
- sealing of surface soil
- landslides, escarpments
- zones of severely degraded vegetation
- siltation
- salinisation
- formation of ravines (gullies, erosion ditches)
- zones with high water erosion

Phase 3: Determining categories of potential land use

Immediately afterwards, a discussion must be held on the potential land use options for the land units considering also the landscape damage. In this process, it will often be necessary to subdivide the land units into sub-units for which the potential land use and certain restrictions or amendments will be laid down. The results of this discussion will be depicted in a separate map agreed with all planning partners and signed by them. This map is an expression of the "optimal" land use planned in future for the individual land units. It constitutes an initial, but provisional agreement towards future land use.

Phase 4: Describing the present types of land use and working out solutions to problems

In further discussions on the land units, this map should be refined with the help of a map depicting the "present land use" according to the existing land use types (e.g. rainfed agriculture, irrigated agriculture, market gardening, plantations, pasture land,

forest, orchards, uncultivated land, water bodies, residential areas, etc.). In general, the information given by the land users based on transect walks and aerial photographs is sufficient. The map "present land use" will also be supplemented by a table describing the following criteria:

- statement on landforms
- cultivated crops or type of trees
- production/yield per hectare
- significance of subsistence
- marketed crops
- major problems
- the extent to which demand is covered by the production
- crop rotation or mixed crops
- significance for local income

What is important is that this map should cover the whole area and not just individual parts within the boundaries. An indication of the land use type (using a legend of the map) for all units of the planning area must be given.

This phase is concluded by initiating a meeting with the participating population. The aim is to solve the local problems identified in the preceding steps:

- social and economic problems;
- land use potential;
- problems with present land use, i.e. the production *in situ*.

The problems discussed should be looked at not only from a current viewpoint, but also the conditions in the past (time horizon of 20 to 40 years previous) and the future development should also be covered.

Phase 5: Negotiation and concluding documentation

On the basis of the maps "land units" and "present land use", the land use potential, restrictions or extensions of land use are discussed and provisionally agreed on. When at a later stage a discussion starts on measures to change the present land use, than the individual people are addressed at the level of their unit of land use, which is the plot of land.

The results of this discussion are documented (table, map etc.), agreed with all participants and signed. The

documentation does not necessarily reflect the optimal land use, given the natural potential, but it does constitute the socially acceptable and sustainable version. It is the binding plan with the implementation of measures allocated to it. Wherever possible, it is also drawn up by the local administration as a document, registered and thereby rendered officially.

The entire documentation of the phase "collection and analysis of data and information" goes into a general report called "Diagnosis Village X". This report serves as retrospective verification at village level, but also as presentation of the work at administration and decision-maker levels. It would be desirable to have the presentation given by a representative of the beneficiary group. These presentations serve not only to give general information to the participating committees, but are also intended as an invitation to make critical comments, etc. In this way, a continuos and contradiction-free work in the subsequent stage of the implementation is supported. The formal starting point for this is the commonly agreed diagnosis report.

Appendix 6: Examples of Linkages between Land Use Planning and General Conditions

The following overview is intended to give an opportunity, in the sense of a checklist, to examine which general conditions exist in the project which are significant for LUP. It is neither complete nor generally applicable, but can hopefully provide the initiative to identify important connections in the context of a project.

Merit of Protection

The suitability of areas for a certain land use is determined by physical factors such as climate, soil, water level, topography, flora and fauna and their mutual reciprocal relationships. Areas with a particularly need for protection are those with an unstable ecosystem, e.g. forests on steep slopes. A special merit of protection can also arise from a particular rarity and diversity of plant communities.

Development Process

The present situation concerning land resources in a specific location is always a momentum within a development process in which natural processes (e.g. the vegetation adapting to climatic changes) overlap with the small and large-scale as well as short and long-term effects of past and present human interventions. It is not only the recent clearing of forests, over-use, etc. at the location which influence the natural potential there. Also, interventions which go back decades or even centuries or which are located far away (e.g. at the headwaters of a river) can have a major effect on the development of the natural resources.

Motivation

The more degraded the natural resources in an area (Sahel), the greater the motivation may be to participate in land use planning and implement appropriate measures. On the other hand, very degraded natural resources in connection with extreme poverty can also lead to total despondency and a passive behaviour. In general, possibilities for actions are very restricted in areas which are extremely degraded, and low income limits the use of labour and capital to rehabilitate such areas.

Influential Economic Factors

All decisions on land use which aims at economic objectives are orientated towards the development on local, regional, national and international markets, e.g. by the prices for agricultural products or for tools and the availability of other resources, in order to consider changes in land use. Decisions depend also on the existing economic order, e.g. to granting or withdrawing subsidies, the direction of exports, restrictions to imports, or on consequences of total barriers to the outside

world. Further important factors are the access to the market, transport costs and expectations of future economic developments. Decisions are also determined by typical patterns in the behaviour of the population regarding the motivation to change, trust in the economic stability, consumer habits, etc. New forms of land use are only realised and disseminated if they offer prospects for success according to economic criteria.

Under pressure of high foreign debts, many developing countries are obliged to obtain foreign currency by exporting products. Frequently, the intention is to achieve this by extending the areas of agricultural use. Without the relevant knowledge and mechanisms of regulation, this quickly leads to the degradation of natural resources, because arable farming is practised on land which is not suitable for this purpose. Similar effects can be provoked by other economic and social causes, for example by expanding markets for certain agricultural products or state subsidy programmes.

In many countries, the forest is even today considered to be a "green hell" and an obstacle to progress. The potential of the soils to yield is thus often overestimated. The economic opportunities which are offered by sustainable use of tropical and sub- tropical natural forests are, however, often not known and therefore not taken into account. Unemployment and under-employment, together with a simultaneous lack of good arable areas, lead to an increasing pressure on the remaining forested areas and conservation areas.

The economic potential of small-farmer producers is usually low due to their high production costs and poor access to markets. The situation is aggravated by high prices of the inputs on the one hand and low market prices for agricultural products on the other ("price gap"), by limited perceptiveness of the local markets, a lack of price information and transparency of the markets, and by the monopoly of middlemen and transport companies. The LUP approach must take account of this situation. It is difficult for the poor rural population to direct their attention to questions of suitability of land use and the long-term sustainability of their forms of cultivation when their daily fight to survive takes up all their time and energy. Land use planning should therefore also include solutions to short-term economic problems of small farmers.

The smallholder farming population mostly does not have an opportunity to improve their weak investment capacity. They

have no savings, and the existing offers of credit are neither suitable for their needs nor accessible to them. Under these circumstances there is, justifiably, very little willingness to discuss changes in land use within the framework of land use planning, in order to achieve sustainable forms of land use. Smallholder farmers cannot take even limited risks with respect to the outcome of the next harvest.

The great economic attraction of cities leads to a situation where the rural regions are becoming drained in favour of the development of urban centres. Especially the economically active age groups and people with a higher level of education as well as the courage to invest and to change are leaving the rural areas. Left behind are the children and the old people, who are not in a position to introduce the necessary innovations.

Influential Political Factors

The use of areas aimed at superior overall interests of society, such as setting up national parks, are determined by political objectives. These depend on the political system, the existing balance of power, the capacity of certain groups to represent their interests and the status of public discussions on topics such as environmental protection or minority rights.

In authoritarian states, restrictions to the freedom of assembly and freedom of speech, to accessibility to maps and data material, and the activities of non-state organisations hamper the implementation of land use plans.

In difficult security situations, LUP is impeded or rendered quite impossible by restrictions to the freedom of movement, unwillingness of the population to enter into a dialogue, the necessity to integrate enemy parties into the planning process and possible dangers for employees.

Influential Legal Factors

If there is an overlap of different legal systems, e.g. traditional law and modern codified law, and if there is a juxtaposition of different forms of production, such as keeping livestock and arable farming, than there will be a potential conflict concerning the decisions on land use in the area. As a result, it becomes more difficult in LUP to reach agreements which are recognised equally by all participants.

An uncertainty about the use of law, such as missing title deeds, leads to unsustainable forms of land use which are promising a profit in the short term and do not require investments which will only be profitable in the long term.

Similar tendencies can be observed when land is not a public asset controlled by the community, such as in some former socialist states or former military dictatorships in Latin America (e.g. Paraguay). Land use planning alone cannot lift these restrictions and change to a responsible use of natural resources.

Knowledge of land law and land order are of major significance when they affect decisions by people and groups in land use planning. In addition, it is essential when the discussion starts on which mechanisms of regulation should be created for the decision-making process.

Balance of Power

In countries with a polarised distribution of land tenure, rules and laws designed to protect the natural resources are often ignored due to the political power situation, in order to prevent an overdue reform of the land ownership. Instead of a land reform, the colonisation on protected areas or forested areas actually not suitable for agriculture is permitted or propagated. This is intended to create an outlet for releasing the social pressure exerted by landless people and to avoid revolutionary political changes.

The distribution of land tenure has a major influence on the creation of interest groups in land use planning. When the distribution of land tenure is extremely inequitable, LUP on a consensus basis can be hampered or even made impossible. Special efforts are required in order to create the willingness of large landowners to participate as equal partners in decision-making processes on future land use.

Influential Organisational Factors

Organisations dealing with issues of agriculture, forestry and environment which typically take on assignments in land use planning are often not sufficiently equipped in terms of personnel and materials. Funds are allocated at irregular intervals, and often salaries are not paid for months. The consequences are a low efficiency, corruption and taking on additional activities. There is a danger in development co-operation that demands will be made of these organisations which go far beyond their capacity. The implementation of LUP leads to additional tasks for the co-operating authorities for which they are usually not prepared. In this case, the available capacity is not sufficient for these additional tasks.

Given the financial bottlenecks, expectations in the organisations are high regarding the equipment. A typical example is the equipment of a project with a geographical

information system (GIS), of which often miracles are expected. Such procurements are often out of proportion to the actual requirements. They lead to a situation where necessary improvements in other fields, such as labour organisation and further education of employees, are neglected.

In many cases, the understanding of land use planning by the employees of these organisations differ from the approach represented by the project. Consequently, there are also different opinions on the objectives and working steps, and a lack of willingness to co-operate in LUP. This activity does correspond to the conception of technicians, and they fear having to change the scope of their technical training or of their previous work.

Many organisations are set up to push the interests of certain groups. This is often contradicting to the substance and objectives of LUP. The sustainability of the promotion is endangered by frequent changes in personnel caused by a shift in the political balance of power. It is difficult to train LUP specialists who can carry out this assignment in the longer term without external support.

There is a danger that the hierarchical structures within the state authorities will paralyse the initiative and sense of responsibility of the technical staff responsible for LUP. They wait for instructions from above. In addition, the staff members avoid taking on any responsibility due to the fear of being made liable for mistakes, and thereby losing the job or any chances of promotion. In general, they do not make their own decisions.

Many sectoral organisations, regional and local authorities and NGOs often compete for responsibilities and work in the same area in an uncoordinated manner. This results in an inefficient overlapping of the activities, confusion in the population and unnecessary expenses. The reasons for this situation are a lack of regulations on implementation in existing laws, political interests or a lack of suitable committees and forms of mutual planning.

Previous or simultaneous activities of different organisations in similar assignments affect the implementation of LUP. If promises have been made but not kept in earlier programmes or projects, the confidence of the population will be low in new projects. Work by other organisations in the same area but with

a different approach confuses the population and has a negative effect on their participation and performance. This is especially the case when subsidies are provided.

Under these circumstances it is often difficult to find suitable partners with whom to carry out land use planning. Attempts to build up a new organisational structure often lead to parallel structures and the sustainability cannot be ensured.

In general, it is an advantage for the implementation of LUP when indigenous and non-governmental organisations exist. They can take on the function of multiplicators, or can offer supplementary services. They are, however, not in a position to guarantee the binding character of LUP decisions. The co-operation with the responsible authorities is necessary to provide the legal guarantee for agreements on land use.

Influential Socio-cultural Factors

The evaluation of different forms of land use is very much determined by traditions and values. It is very difficult to change these cultural values by LUP, even if this appears to make perfect sense as far as the sustainability of the land use is concerned. Thus, it is still a major status symbol to own heavy livestock. Conflicts can arise when different groups of the population with differing traditions meet. An example of this can be given in the form of claims to land use by settlers in "holy places "of the resident population. Migrating people and settlers bring to their new settlement areas different values which no longer correspond to the local ecological requirements.

The attitude of different groups of the population to authorities and to the national and regional elite have a profound effect on their acceptance of state LUP agencies. This can range from acceptance of the authorities to a general mistrust.

The social organisation of the participating groups is of major significance for the participation in LUP and for negotiating on and implementation of LUP measures. Are there a tradition of community work, functioning interest groups and intact supra-regional relations, or do individualistic social structures rule? The latter is often the case in new settlement areas or in regions which have a high seasonal migration rate.

In general, the support by the state, the church or representatives of the local elite as an expression of paternalistic relations influence the willingness of small-farming land users to get active.

In many societies, there are traditional mechanisms and authorities for settling questions on land use. These structures have been undermined by social change or have been lost altogether. By focussing on revitalising or the further development of such mechanisms - even if only fragments remain -there is a considerable potential for LUP. Cause-effect relationships are often understood by the local population in a different way from the project staff. This explains why long-term orientated planning can often not be arranged so easily. The reasons must be found out and analysed why the perceptions are so different .

Women, children and older people have a special interest and motivation in LUP. This is caused by their role in the family or gender and age-specific division of labour. Their legal and social position is often special, as it is expressed in differing rights of access to land. Thus, in West Africa, women and young unmarried men are often get fields allocated where they are allowed to cultivate to earn their own income. At the same time, however, they have an obligation also to do some work in the fields belonging to the head of the family. This should be taken into account in LUP. It is not enough to deal with the interests of the head of the family; but his wives or sons may have different interests, e.g. with respect to the cultivation of subsistence or cash crops. Often, the local population does not have the time required in LUP for continuous negotiation processes and implementing measures. The differing seasonal workloads, the distribution of tasks according to gender and the fact that farmers often can and wish to attend meetings only on Sundays play a major role.

Appendix 7: Key Questions on the Subject of Participation

The specific ways in which the institutional forms of participation function are considered in the following catalogue of key questions:

1. Who are the initiators of the process, who established the group, the organisation? Is there an "ranking" from the groups in question?
2. What is the purpose of the institution and what are its assignments, responsibilities and powers? What is the legal status of their decisions? What is the degree of continuity and how binding are its decisions?
3. What role is played in the participation process by female facilitators, mediators, female moderators, animators both men and women?
4. How is technical planning competence in the process in LUP? How is the necessary level of information on contexts specific to the locality and viewpoints of problems guaranteed?
5. How are the stakeholders who are involved in land use problems in the planning area represented, directly or indirectly?
6. How can people become a member of a group or organisation? Is the process open to all social groups and figures or does it purposefully concentrate on certain stakeholders? To what extent are groups with a socially weak position taken into account? How is the participation by these groups assured in the longer term?
7. Can the process be democratically controlled, e.g. *vis-a -vis* the influence of strong external interests or the development of self-interests? If there is a lack of controlling mechanisms, how can at least a partial conciliation of interests still be achieved amongst the participants?
8. How intensive are the communication and co-ordination amongst the participants and how are these structures maintained? How is this achieved in the case of participation by migrating livestock keepers?

9. Which conflict solving mechanisms (arbitration, moderation) are provided ? How are situations in which a consensus can not be reached dealt with? How do agreements become a binding character and how is this controlled?
10. Which opportunities are existing in the process of empowering the participants? To what extent are joint learning effects and changes in behaviour encouraged by an increase of the local competence for planning and action? What chances do the participants, especially the direct land users have to influence the steps of the participation process or to plan the tools and methods used?
11. Are there specific incentive mechanisms in connection with the participation processes, are there measures aimed at building up trust, compensation, etc.?
12. What is the cost-benefit-ratio? Each procurement, the establishment and development of an institution, an operation or an organisation mean investments.
13. What are the relations to the state administration? To what extent does the process lead to co-ordination or integration of sectoral agencies? Is the process already part of the existing planning and administration structures, or is it suited to be integrated at a later date? Are there activities oriented towards the formation of "parallel administration structures"?

Sequence according to land use requirements

The land use options listed below have different requirements on land and therefore restrictions concerning their suitability for an implementation. In order to better allocate land use options, each individual land unit must be evaluated in terms of its land characteristics and it must be brought into context with the most important socio-economic and technical criteria.

The next paragraphs are intended to give an overview on land use options in form of a rough sequence, followed by a detailed evaluation.

The land use options "built -up areas" (settlements, industrial facilities, roads) and the options "conservation areas" and "buffer zones" will not be the subject of further consideration at this point. They are determined externally or are orientated towards biodiversity criteria, which usually are applied independently of land use requirements.

1. Natural Forest

	Land Use Requirements
Availability of water	very adaptable due to variable composition of species. Limit in rainfall: >250 mm per annum
Soil Nutrients	very adaptable due to variable composition of species
Slope	almost no restriction
Rooting Conditions	very adaptable, on shallow soils: more small trees and shrubs
Risk for topsoil erosion	of little significance, given sufficient vegetation cover
Soil drainage	adaptable due to variable composition of species (with the exception of swamp areas)
pH-value of the soil	very adaptable due to variable composition of species
Elevation	below the tree line

	Socio-economic conditions
Traditionally known land use option	almost always known
Self-supply	local use important for various purposes, partly also for food supply, hunting, forest pasture, etc.
Legal status of the land	Often state land, therefore rights of use must be clarified prior to the implementation of measures
Conflicts of use	especially between tree felling companies and village population or between village population and the state
Consumer or Consumption Practices	mostly unhindered removal of products by the local population for their consumption, partly impeded by controls of officials, especially when products are removed for commercial purposes
Marketability of the products	often intervention by the forestry authority; in general, timber of greater value is not marketed via the local population, but firewood and secondary forest products (baskets, honey, herbs, etc.)
Economic risk	Low, since investment by the village is rare
Surveillance	not normally practised
Prestige value/ Motivation Value	Varies very much, depending on the product

2. Natural Pasture

	Land Use Requirements
Availability of water	very adaptable due to variable composition of species. Limits in rainfall: > 150 mm per annum
Soil Nutrients	very adaptable due to variable composition of species
Slope	should not be practised on slopes above the locally observed erosion limit (at present clay = 2% slope)
Rooting conditions	variable, the deeper the soil, the better; limit lies mostly at Round 8 – 10 cm, depending on distribution of rainfall
Risk for topsoil erosion	soil can be protected very effectively by dense sward; the more sparse the sward (e.g. in arid zones), the more susceptible the soil substratum is to erosion, especially on slopes
Soil drainage	greatly affects the composition of species of the pasture grasses a higher moisture-holding capacity has a positive effect in arid zones; grazing of animals reduces drainage due to canpaction of the soil
pH-value of the soil	best between pH 5.5 and pH 8, but in even extreme situations the soil can be used by adapting the composition of species; improving the pasture plants community requires special knowledge
Elevation	below the vegetation line

	Socio-economic conditions
Traditional, Known land Use option	almost always known
Self-supply	use of areas for pasture purposes often well beyond self-supply
Legal status of the land	often community land treated as no-input land, different from private lands; pasture regulations and rehabilitation measures are often necessary
Conflicts of use	often overlapping of stationary and mobile livestock keeping with conflict potential
Consumer or Consumption Practices	mostly traditions of use, no innovations
Marketability of the products	in general , no bottlenecks, as long as access to the market is guaranteed (roads, transport); profitability of livestock keeping cannot always be proved
Economic risk	Livestock epidemics, drought years, excessive grazing and degradation of vegetation cover, excessive advantages for small producers, etc.
Surveillance	very costly surveillance is often practised

3. Intensive Forest

	Land Use Requirements
Availability of water	must be continuously available by high rainfall, need for water depends on species planted, but as in general higher than for natural forests
Soil Nutrients	often higher demands than for natural forest
Slope	mostly small restrictions, if planted species are sufficiently fixed
Rooting Conditions	in general, deeper than in a natural forest, depending on the species but at least 1.20 m and more
Topsoil erosion risk	plays a role if natural forest is cleared on steep slopes in order to plant intensive forest; therefore it must be avoided or by-passed by planting enrichment plants (without clearing)
Drainage of the soil	extremely poor-drained soils, sites which are frequently waterlogged can constitute a limiting factor
pH-value of the soil	depends on the pH-requirement of the species
Elevation	note the limits specific to the species (information available from the forestry service); depends on the latitude

	Socio-economic conditions
Traditional known land use	often unknown or not practised, since local village inhabitants often do not see a sense in practising the option
Self-supply	has often little reference to local supply, which is, in general provided by the natural forest
Legal status of the land	must be clarified before planting, as it decides future use; on communal land either communal care and use, or division into plots for use (village intern)
Conflicts of use	between the village and timber companies, between the village and the state
Consumer or Consumption Practices	product often not known and intended for sale (source of income!), sometimes inappropriate use (eucalyptus for construction purposes)
Marketability of the products	often good, especially in times of shortages, which was the initial point for planting
Economic risk	must be examined by investigations e.g. the profitability; assessing the risks into account before planting
Surveillance	often necessary to prevent theft, especially in tree-cultures similar to plantations (cinnamon, cinchona bark, etc.)
Prestige value/ Motivation	often high (innovation prestige)

4. Intensive Pasture / Fodder Cultivation

	Land Use Requirements
Availability of water	often, high and evenly distributed rainfall or possibilities of irrigation are necessary, because the composition of species is more demanding than in natural pasture
Soil Nutrients	high demands, in general supplemented by fertilisers
Slope	usually on even terrain or on terraces
Rooting Conditions	deeper than natural pasture, rarely less than 30 cm
Topsoil erosion risk	dangerous on land which has been repeatedly cleared and kept unprotected by removing the plant cover (e.g. by harvesting fodder plants), especially on slopes
Drainage of the soil	waterlogging as exclusion criteria
pH-value of the soil	no extreme pH values, generally between pH 5.4 and pH 7.6
Elevation	at elevations of local arable farming

	Socio-economic conditions
Traditional, known land use option	often innovative activities
Self-supply	often serves to bridge seasonal fodder bottlenecks; near cities, often very beneficiary fodder sales (cash crop) possible
Legal status of the land	mostly on private plots, rarely on communal pasture land; only possible when the animal producers are well organised
Conflicts of use	when local pasture rights overlap with the traditional rights of migrating livestock keepers
Consumer or Consumption Practices	fast adaptation, rarely problems with the consumption of surplus of produced fodder
Marketability of the products	animal fodder as cash crop near the cities, often with an excellent profitability, can be increased by combination with known fodder trees; sale of milk only worthwhile near the cities
Economic risk	low, unless the additional fodder is diverted into high-risk branches of production
Surveillance	often necessary, especially to prevent stray animals from entering
Prestige value/ motivation value	high (innovation prestige)

	Land Use Requirements
Availability of water	high in comparison to rainfed agriculture, competition for water between woody plants and crops must to a large extent be excluded (in tropical climates more than 500 mm rainfall per annum)
Soil Nutrients	top soil: not decisive, since nutrients are "pumped upwards" from deeper layers of the soil by the trees
Slope	suitable on gentle slopes, whereby the woody plants (mostly planted horizontally in hedge formation) function as soil stabilisers
Soil depth to roots	at least 60 cm
Topsoil erosion risk	on slopes, as far as possible on stable soils, as the protective effect starts only after 3 - 4 years; relatively insignificant on plain land
Drainage of the soil	on slopes, not on poorly drained clay / poor clay soils; insignificant on plain land
pH-value of the soil	since the land is used simultaneously for arable farming, the limiting pH values 5.4 to 7.6 apply
Elevation	in general, at elevations of local arable farming

	Socio-economic conditions
Traditional known land use option	agroforestry systems are traditionally developed almost everywhere by local farmers; they should not be radically changed, but integrated or further developed and adapted to the special local conditions
Self-supply	the system makes a contribution to the local demand for food, wood, fodder, cash, etc.
Legal status	usually on individual plots of the land
Conflicts of use	no particular potential for conflict, since cultivation is mainly on an individual basis
Consumer or consumption practices	often no innovations, therefore no break with the traditional use of the products
Marketability of the products	no "special" products; marketing of surpluses, therefore generally no bottlenecks
Economic risk	Low
Surveillance	surveillance necessary in a similar way as for arable farming (against theft and to prevent animals from entering)
Prestige value/ motivation value	established, reliable prestige and motivation values

	Land Use Requirements
Availability of water	amount and distribution of rainfall, and the demands of the specific crops play a decisive role (example millet: > 280 mm/a; well distributed in 120 consecutive days)
Soil Nutrients	the better the supply of nutrients, the higher the yields to be expected; nutrient status can be improved by fallow or fertilisation; many crops (e.g. millet) show clear yield limits even by fertilisation
Slope	as far as possible on plain land; knowledge of local erosion risks is essential and has to be considered
Rooting Conditions	at least 40 cm
Topsoil erosion risk	varies according to the characteristics of the topsoil: clay erodes at a 2% incline, organic black soils are often relatively stable up to 10%; prevent erosion by applying adapted techniques of tillage (e.g. ploughing topsoil parallel to contour lines)
Drainage of the soil	extreme situations (clay: waterlogging, sand: excessively fast infiltration of water and nutrients) set clear limits for rainfed agriculture
pH-value of the soil	between pH 5.4 and pH 7.6
Elevation	suitable elevations are generally known to the inhabitants of the region

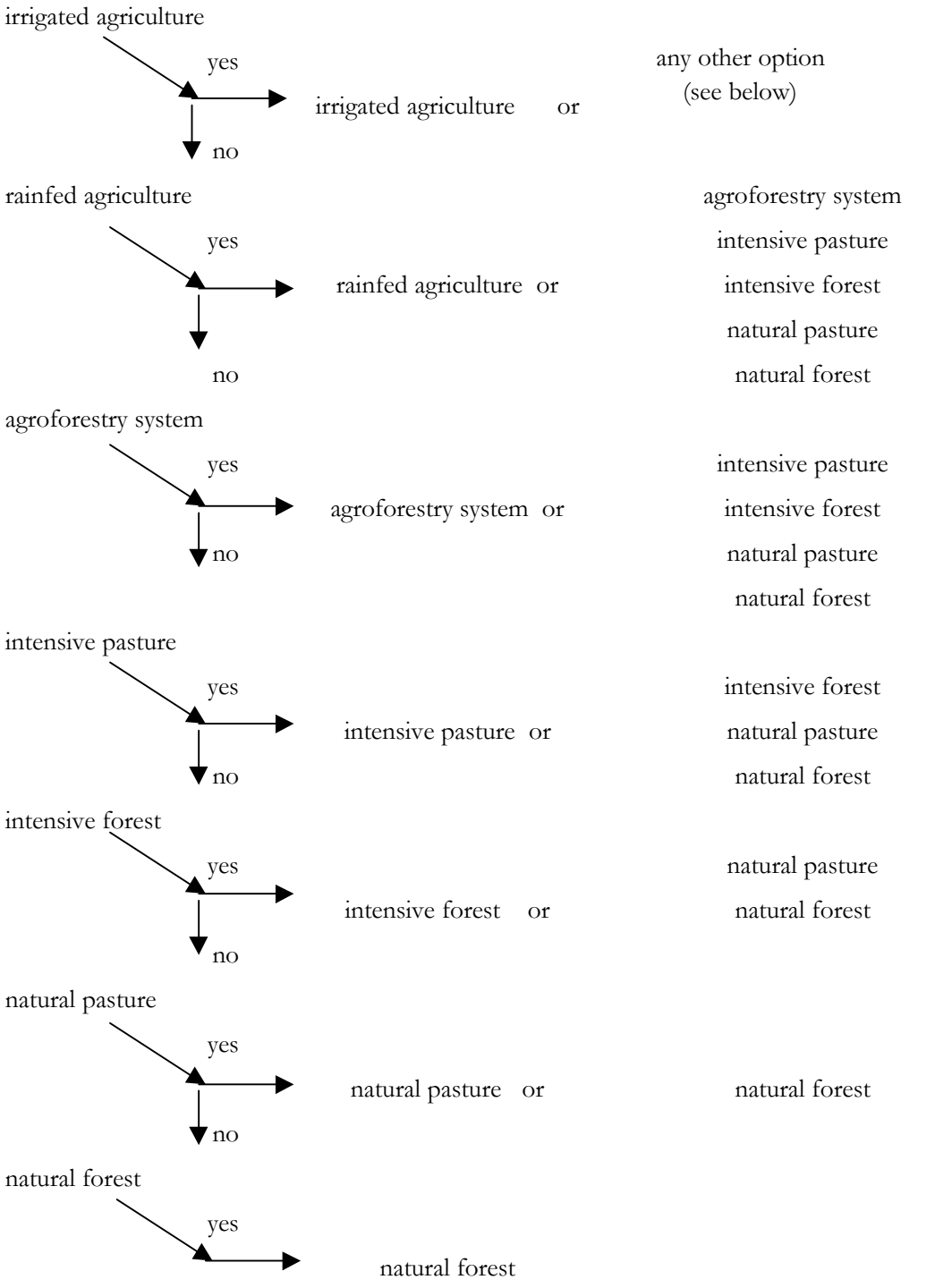
	Socio-economic conditions
Traditional known land use option	Yes
Self-supply	in general, the essential needs for basic food production are covered by rainfed agriculture
Legal status of the land	mostly individual cultivation (household level) with different regulations in rights of land use and/or tenure
Conflicts of use	frequent conflicts with livestock keepers and/or their straying animals
Consumer or Consumption practices	crops generally correspond to the traditionally consumed crops (corn, tuber crops, etc.
Marketability	generally surpluses can be sold without any problems, if there is access to marketing facilities (local market, etc.)
Economic risk	mostly low, since the products (especially corn) can be stored
Surveillance	surveillance against theft when crops are ripe, and against birds and animals
Prestige value/ motivation value	established, reliable prestige and motivation values

7. Irrigated Agriculture

	Land Use Requirements
Availability of water	rainfall: relatively unimportant irrigation water: must be available when needed
Soil Nutrients	in paddy fields: rice: has relatively low demands on the soil, assured by fertilisation; temporary irrigated agriculture is comparable to rainfed agriculture
Slope	in sloping areas establishment of terraces, for which the "economic limit" is around 6 - 10% incline
Rooting Conditions	in paddy fields, it is desirable to have a in a depth of 30 - 40 cm an impermeable layer , in order to avoid infiltration losses
Topsoil erosion risk	insignificant, since the land is plain
Drainage of the soil	in paddy fields: low infiltration desired, at the same time high water retention capacity (field capacity)
pH-value of the soil	in paddy fields between pH 4.6 and pH 7.2 (rice); in irrigated agriculture additionally between pH 5.4 and pH 7.6
Elevation	as for rainfed agriculture; many types of rice have an upper limit of about 1,700 m a.s.l.

	Socio-economic conditions
Traditional, known land use option	Yes
Self-supply	in the highly productive paddy fields of Central Java, an area of 0.085 hectares "feeds" one person with rice (cycle with 3 crops per annum)
Legal status of the land	land preparation requires the major investment in terms of money and labour, so the legal status of the land must be especially guaranteed
Conflicts of use	some destruction of fences and small dams by grazing animals after the harvest
Consumer or Consumption Practices	crops produced do generally correspond to the traditional consumption practices
Marketability of the products	mostly good, if there is access to the market
Economic risk	low, since products can generally be stored
Surveillance	surveillance against theft and birds when crops are ripe
Prestige value/ Motivation value	high, especially when the required food cannot be produced in the area by rainfed agriculture

Scheme for identifying land use options at given locations



This procedure leads to land use options according to their economic profitability, and is certainly a useful scheme in areas of high pressure on land resources. Of course, the sequence presented here can vary from location to location, e.g. an intensive pasture can, in individual cases, be placed higher than rainfed agriculture in terms of economic factors. Furthermore, additional land use options can be added and others neglected. If there are land reserves which should not or cannot be developed directly, an option should be implemented or maintained which is ecologically stable (e.g. natural forest). This might also be possible in a location for potential irrigated agriculture.

A land use option can always be implemented in place of an option placed lower in the scheme without having a destabilising effect. This is, however, (almost) never possible when an alternative option is going to be considered which is placed higher, at least not without considerable technical and financial inputs.

Obviously, the various mixed forms of cultivation and land use (e.g. forest pasture, shifting cultivation with long fallow rotation, plantations in partly very intensive cultivations, special cultures) are placed somewhere "between" the land use options described. Some do, however, require special local and socio-economic conditions.

Repeatedly, demands have been made for mapping and planning the covered the area belonging to the village. It will happen that, after covering the village areas, some additional areas will be "left over", which are located far from the village. Most of them have hardly been used labour-intensively, e.g. these are eroded bushlands or hilly landscapes, often destroyed by fire. In the understanding of the village inhabitants, these areas are of " little use". Often this is state or communal land, or private land which has been left open.

Also this land must be considered if not only the immediate demands will be focused on but also an ecological impact is expected. It is obvious, that in the course of time, this land has developed to its present, degraded appearance from an originally intact state (natural forest). This has happened due to unsustainable land use in the long term. The reason for this may lie in the fact that title deeds or land use rights either were not given to the individual farmers, or there was enough land available to clear and cultivate plots elsewhere. Thus in the

past, the degraded land fulfilled an economic function. It is therefore an obligation to stabilise these areas to such an extent that a further degradation is not possible. Generally, it is sufficient for this purpose to reforest these areas using simple means (e.g. direct forest seeding). The results must then be protected from grazing animals.

Bibliography

Akademie für Raumforschung und Raumplanung 1995. Handwörterbuch der **Raumordnung Hannover: ARL. 1160 pages**

Amler, B. 1994. Landnutzungsplanung für Entwicklungsländer. Methoden der Standorteignungsbewertung und Landnutzungsplanung für den ländlichen Raum in Entwicklungsländern. Landschaftsentwicklung und Umweltforschung; Schriftenreihe des Fachbereichs Landschaftsentwicklung der TU Berlin, No. 85. Berlin: TU Berlin. 388 pages.

Amler, B. & Betke, D. 1993. Landnutzungsplanung in Entwicklungsländern. Annotierte Bibliographie. Berliner Beiträge zu Umwelt und Entwicklung, No. 1. Berlin: GTZ, TU Berlin. 146 pages.

Augustin, E. 1995. Gender Training Manual for People and Gender Oriented Project Planning and Implementation. Eschborn: GTZ, OE 04/Pilotprogramm Frauenförderung.

Baier, M. 1993. Village Level Development and Land Use Planning, Part 2: Aberdare Workshop Report, Aberdare, Kenya, 15.2.-17.2.1993. Eschborn: GTZ, OE 425.

Bakema, R.J. (Hrsg) 1994. Land Tenure and Sustainable Land Use. KIT Bulletin, No. 332. Amsterdam: Royal Tropical Institute. 47 pages.

Bakema, R.J. (Hrsg) 1994. Local Level Institutional Development for Sustainable Land Use. KIT Bulletin, No. 331, Amsterdam: Royal Tropical Institute. 63 pages.

Blume, H.-P., Eger, H., Fleischhauer, E., Hebel, A., Reij, C. Steiner, K. G. (Editors) 1998. Towards Sustainable Land Use - Furthering Cooperation between People and Institutions. Advances in Geoecology 31. Reiskirchen. Volume 1 and 2.

Bogado, L., Bozzano, B., Kohler, A., Meza, M. & Onhara, J.R. 1992. Taruma alto vera una propuesta agroecologica. Experiencias y criterios para la planificacion de asentamientos rurales. Proyecto planificacion del manejo de los recursos naturales, No. 7. Eschborn: GTZ. 138 pages.

Bollinger, E., Reinhard, P. & Zellweger, T. 1991. Landwirtschaftliche Beratung. Ein Leitfaden für

Beraterinnen und Berater im ländlichen Raum. Teil A-D. Bern: SKAT, LBL, DEH.

Boschmann, N. 1995. Consideration of Gender Issues in Irrigation. Eschborn: GTZ, OE 421.

Dalal-Clayton, B. & Dent, D. 1993. Surveys, Plans and People. A Review of Land Resource Information and its Use in Developing Countries. Environmental Planning Issues, No. 2. London: IIED. 148 pages.

DEH (Direktion für Entwicklungszusammenarbeit und humanitäre Hilfe) 1992. Zusammenarbeit planen. Eine Arbeitshilfe für erfahrene Planer und solche, die es werden wollen. Bern: DEH. 117 pages.

Diepen, C.A. van, Keulen, H. van, Wolf, J. & Berkhout, J. 1991. Land evaluation; From Intuition to Quantification. In: Advances in Soil Science,Vol. 15; pages 139-204. New York: Springer.

Douglas, M.G. 1989. Integrating Conservation into the Farming System: Land Use Planning for Smallholder Farmers. Concepts and Procedures. London: The Food Production and Rural Development Division. Commonwealth Secretariat.

ENDA/GRAF (Groupe Recherche Action Formation) 1992. The Future of Community Lands - Human Resources. London: Intermediate Technology Publications. 236 pages.

Enberg-Pederson, L. (1995): Creating Local Democratic Politics from Above: the Gestion de terroirs approach

Esser-Winkler, H. 1992. The Spark has Jumped the Gap. Eschborn: GTZ. 40 pages.

EUROCONSULT. 1989. Agricultural Compendium for Rural Development in the Tropics and Subtropics. Amsterdam: Elsevier. 740 pages.

FAO. 1976. A Framework for Land Evaluation. FAO Soils Buletin, No. 32. Rome: FAO. 87 pages.

FAO. 1983. Guidelines: Land Evaluation for Rainfed Agriculture. FAO Soils Bulletin, No. 52. Rome: FAO. 237 pages.

FAO. 1984. Land Evaluation for Forestry. FAO Forestry Paper, No. 48. Rome: FAO. 123 pages.

FAO. 1991. Guidelines: Land Evaluation for Extensive Grazing. FAO Soils Bulletin, No. 58. Rome: FAO. 158 pages.

FAO. 1993. Guidelines for Land Use Planning. FAO Development Series, No. 1. Rome: FAO. 96 pages.

FAO. 1995. Planning for Sustainable Use of Land Resources: Towards a new Approach. FAO Land and Water Bulletin 2. Rome: FAO.

FAO/UNEP. 1995. Our Land Our Future - A new approach to land use planning and management. Rome: FAO/UNEP. 48 pages.

FAO/UNEP. 1998. Negotiating a Sustainable Future for Land - Structural and institutional guidelines for land resources managment in the 21st century. Rome: FAO/UNEP. 61 pages.

Fresco, L., Stroonsnijder, L., Bouma, J. & Keulen, H. van (Hrsg) 1994. The future of the Land: Mobilising and Integrating Knowledge for Land Use Options. Chichester: Wley. 409 pages.

Funes, E.L., Kohler, A., Tapia, M. & de Zutter, P. 1993. De la conversaci n al desarollo agro-silvo-pastoral. Chore: campesinos y tecnicos en la planificaci n del uso de la tierra. Proyecto planificaci n del uso de la tierra, No. 9.Eschborn: GTZ. 147 pages.

Gaesing, K. & Bliss, F. 1992. Möglichkeiten der Einbeziehung von Frauen in Maßnahmen zur ressourcenschonenden Nutzung von Baum-beständen. Forschungsbericht des BMZ No. 100. Cologne: Weltforum-verlag. 295 pages.

GTZ. 1992. Village Level Development and Land Use Planning. Part 1: Arusha Workshop Report. Arusha, Tanzania, 30.11.-5.12.1992. Eschborn: GTZ.

GTZ. **1996.** Planificación del uso de la tierra Indicaciones para la orientación de género. Eschborn: GTZ.

GTZ. 1998. Land Tenure in Development Coorperation Guiding Principles. Wiesbaden: GTZ. 252 pages.

GTZ/Effler,-D. 1993. Workshop Dokumentation: Landnutzungsplanung in der Technischen Zusammenarbeit. Ansätze zur Instrumentenentwicklung auf der Basis von Projekterfahrungen. Berlin, Germany 5.7.-8.7.1993. Eschborn: GTZ.

GTZ / Müller, U. 1995. Taller Regional: Planificacion del Uso de la Tierra Planificacion General/Planificacion Estrategica. Intercambio de experiencias y discusion de

conceptos. Santa Cruz, Bolivia, 17.10.-22.10.1994. Eschborn: GTZ.

GTZ / OSS (Observatoire du Sahara et du Sahel) 1994a. Atelier Regional: Gestion et Amenagement des Terroirs dans la Cooperation Technique. Niamey, Niger, 24.1.-28.1.1994. Documentation et Synthese. Eschborn: GTZ/OSS.

GTZ/OSS. 1994b. Regional Workshop: Land Use Planning in Technical Cooperation. Naivasha, Kenya, 7.4.-11.4.1994. Documentation and Synthesis. Eschborn: GTZ/OSS.

GTZ/Rauch, T. 1993. LRE aktuell -Strategieelemente für eine Umsetzung des LRE-Konzepts unter veränderten Rahmenbedingungen. Eschborn: GTZ, OE 425. 177 pages.

GTZ/RMSH (Natural Resource Management by Self-help Promotion) /Amler, B. 1993. Taller Regional: Planificacion del Uso de la Tierra. Villavicencio, Columbia, 30.11.-4.12.1993. Tübingen/Bonn: GTZ.

GTZ/RMSH/Balzer, G. & Engel, A. 1995. Incentives and the NARMS Approach. Eschborn: GTZ/RMSH. 28 pages.

GTZ/RMSH/Fischer, W. 1994. Participatory and Self-help Approaches in Natural Resource Management A Position Paper. Eschborn: GTZ/RMSH. 55 pages.

GTZ/RMSH/Hahn, A. 1994. Hinweise auf Schlüsseldokumente für die Anwendung von Beteiligungs- und Selbsthilfeansätzen im Ressourcenmanagement. Eine Handreichung für Mitarbeiterinnen und Mitarbeiter in der Projektplanung und -durchführung. Eschborn: GTZ, OE 402/RMSH. 55 pages.

GTZ/RMSH/Wiese, B. 1993. Regional Workshop: Land Use Planning in Technical Cooperation. Further Development of the Instrument on the Basis of Project Experiences. Kandy, Sri Lanka, 1.11.-6.11.1993. Documentation and Synthesis. Frechen/Bonn: GTZ/RMSH.

Jenssen, B. (Hrsg.) 1992. Planning as a Dialogue. District Development Planning and Management in Developing Countries. Spring Research Series, No. 2. Dortmund: SPRING-Center, DSE. 237 pages.

Kerstan, B. 1992: What is the Aim of Gender-Analysis. In: Workshop Report: Integration of Women in Indonesian-German Technical Cooperation.Bandung, Indonesia. 26.4.-29.4.1992. Eschborn: GTZ.

Kerstan, B. 1995. Gender-Sensitive Participatory Approaches in Situation Analysis. Trainers' Manual for local experts. (expected to be published in October 1995) Eschborn: GTZ, OE 04/Pilotprogramme Frauenförderung.

Kirk, M. & Adokpo-Migan, S. 1994. The Role of Land Tenure and Property Rights in Sustainable Resource Use: The case of Benin. Bonn/Eschborn: PVI, GTZ. 191 pages.

Kwakernaak, C. (Hrsg.) 1995. Integrated Approach to Planning and Management of Land: Operationalization of Chapter 10 of UNCED's Agenda 21. SC-DLO Report 107. Wageningen: DLO Winand Staring Centre. 102 pages.

The Land (1997/98). Journal of the International Land Use Society. Kent: International Land Use Society. Volumes 1.1 - 2.2.

Landon, J.R. (Hrsg.) 1991 . Booker Tropical Soil Manual: A Handbook for Soil Survey and Agriculture. London: Longman.

Luhl, H.-P. 1992. Holistic Resource Management. In: IlEIA Newsletter, 8, pages 10-11.

Luning, H.A. 1995. Land and Land Institutions Revisited. In: ITC Journal, 1995-1, pages 56-61.

Makhdoum, M.F. 1992. Environmental Unit: an Arbitrary Ecosystem for Land Evaluation. In: Agriculture, Ecosystems and Environment, Vol. 41, pages 209-214.

Mitchell, A.J. (Hrsg.) 1984. Land Evaluation and Land Use Planning in Tabora Region, Tanzania. Land Resource Study, No. 35. Tolworth Tower, Surbiton: LRDC. 208 pages.

Moser, C. 1989. Gender Planning in the Third World: Meeting Practical and Strategic Gender-Needs. In: World Development, Vol. 17, No. 11.

Osterhaus, J. & Salzer, W. 1995. Gender-Differenzierung im Projektzyklus. Hinweise für Planung, Monitoring und Evaluierung. Eschborn: GTZ. 59 pages.

PGRN (Projet de Gestion des Ressources Naturelles) 1995. Elaboration d'un plan d'amenagement/plan de gestion des

terroirs. Manuel de planification. Bamako: PGRN, IDA, GTZ. 38 pages.

Poats, S. & Russo, S. 1990. Gender Issues in Agriculture and Natural Resource Management. Washington, D.C.: USAID, Office of WID.

Pretty, J.N., Guijt, I., Scoones, I. & Thompson, J. 1995. A Trainer's Guide for Participatory Learning and Action. IIED Participatory Methodology Series. London: IIED. 267 pages.

Pretty, J.N., Thompson, J. & Kiara, J.K. 1995. Agricultural Regeneration in Kenya: The Catchment Approach to Soil and Water Conservation. In: Ambio, Vol. 24, pages 7-15.

Reineke, R.-D. & S lzer, R. 1995. Organisationsberatung in Ent-wicklungsländern. Konzepte und Fallstudien. Wiesbaden: Th. Gabler. 334 pages.

Schönhuth, M. & Kievelitz, U. 1994. Participatory Learning Approaches. Rapid Rural Appraisal. Participatory Appraisal. Eschborn: GTZ. 183 pages.

Schubert, B. et al. 1994. Facilitating the Introduction of a Participatory and Integrated Development Approach (PIDA) in Kilifi District, Kenya. Vol. I: Recommendations for Institutionalising PIDA based on four pilot projects. 175 pages. Vol. II: From concept to action. A manual for trainers and users of PIDA. 215 pages. Schriftenreihe des Seminars für Landwirtschaftliche Entwicklung, Humboldt-Universität zu Berlin, No. S164 (Vol. I & II) Weikersheim: Markgraf.

Scoones, I. & Thompson, J. 1994. Beyond Farmer First. Rural people's knowledge, agricultural research and extension practice. London.

Shah, P. 1993. Participatory Watershed Management Programmes in India: Reversing our roles and revising our theories. In: Rural people's knowledge, agricultural research and extension practice; Asia papers. Research Series, Vol. 1, pages 38-67. London: IIED.

Soliani, L. & Rossi, O. 1992. Demographic Factors and Land Use Planning in the Small Islands of Southern Europe. In: Environmental Management, Vol. 16, No. 5, pages 603-611.

Staver, C., Simeone, R. & Stocks, A. 1994. Land Resource Management and Forest Conservation in Central Amazonian Peru: regional community and farm-level approaches among native peoples. In: Mountain Reasearch and Development, Vol. 14, pages 147-157.

Staveren, J.M. van & Dusseldorp, D.B. van (Hrsg.) 1983. Framework for Regional Planning in Developing Countries. Methodology for an interdisciplinary approach to the planned development of predominantly rural areas. ILRI Publication, No. 26. Wageningen: ILRI. 345 pages.

Tan-Kim-Young, U. 1993. Participatory Land Use Planning as a Sociological Methodology for Natural Resource Management. In: Regional Development Dialogue, Vol. 14, pages 70-85.

Thebaud, B. 1995. Pour un developpement durable du pastoralisme au Sahel dans le cadre de la mise en oeuvre de la convention internationale sur la lutte contre la desertification. Paris: OSS, IIED. 22 pages.

Toulmin, C. 1993. Gestion du Terroir, Principles, First Lessons and Implications for Action. A discussion paper prepared for UNSO. London: IIED. 43 pages.

Uphoff, N. 1992. Local Institutions and Participation for Sustainable Development. London: IIED. 16 pages.

Waters-Bayer, A. & Bayer, W. 1994. Planning with Pastoralists: PRA and more. A review of methods focused on Africa. Eschborn: GTZ, OE 422. 153 pages.

Wilkinson, G.K. 1985. The role of legislation in land use planning for developing countries. FAO Legislative Study, No. 31.Rome: FAO. 160 pages.

Wright, J.R., Wiggins, L.L., Jain, R.K. & Kim, T.J. 1993. Expert Systems in Environmental Planning. Berlin. 311 pages.

Index of Abbreviations

DC	Development Cooperation
FAO	Food and Agriculture Organisation of the United Nations
GDB	German Development Bank
GIS	Geographical Information Systems
GTZ	Gesellschaft für Technische Zusammenarbeit
LUP	Land Use Planning
M&E	Monitoring and Evaluation
NGO	Non-Governmental Organisation
PAR	Participatory Action Research
PIDA	Participatory and Integrated Development Approach
PRA	Participatory Rural Appraisal
ROPP	Regional Oriented Programme Planning
RRA	Rapid Rural Appraisal
RRD	Rural Regional Development
TG	Technical Cooperation
WGLUP	Working Group for Integrated Land Use Planning

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