



Planning land use together

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In the highlands of northern Thailand, promoting sustainable farming systems is proving to be more of a socioeconomic issue rather than transfer of technology. The Thai-German Highland Development Programme (TG-HDP) tries to develop means and procedures for government extensionists to relate to this new understanding.

Most farm households in the highlands practise shifting cultivation based on upland rice grown on slopes ranging from 35% to over 70%. Various forces are causing a rapid change in these farming systems, e.g. increasing scarcity of land, pressure from the government to reduce soil erosion and to refrain from shifting cultivation, forest cutting and opium growing, and road construction and the subsequent exposure to urban markets.

The Royal Thai Government is trying to promote permanent and sustainable farming systems. Various government and non-government organisations and programmes are involved in this effort. Since 1987 TG-HDP has promoted a package of measures including grass strips and/or alley cropping to control erosion, combined with zero-burning, minimum tillage, mulching and strip cropping.

In some cases, adoption of these recommendations has been moderately successful. Often, however, farmers adopted (he measures not in order to practise more sustainable farming, but for many other reasons such as Securing land tenure and legal status, improving their relationship with government officials and/or in response to material incentives. Moreover, in most villages, adapters have been mainly the better-off farmers (Orth et al. 1991),

Barriers to real adoption

The main reasons preventing real adoption are:

- Farmers often do not perceive decreasing sustainability as a major problem. They relate problems of declining yields mainly to weeds, pests and diseases and, to some degree, to decreasing soil fertility, whereas the recommendations are mainly aimed at controlling soil losses. Soil loss is a major problem from the government's point of view, but not from the farmers' if farmers problems are to be addressed, a much broader and more holistic view has to be applied.
- As the natural and socioeconomic conditions vary greatly, ready-made packages of technical recommendations are of limited relevance for the specific conditions of a particular farm household.
- Short-term benefits-if any-from following tile recommendations do not

More sustainable agricultural practices adopted by farmers in Ban Pha Charoen, Northern Thailand; not neat and orderly, but following farmers criteria and needs.

pay for the additional labour inputs and/or costs of these measures, Resource-poor farmers, who often have to calculate with annual discount rates of 50% and more, can hardly afford to invest a substantial part of their labour into future benefits, if their daily survival is not secured.

Community-based landuse planning

TG-HDP is now developing an approach which will enable government extensionists to cooperate more closely and communicate more appropriately with farmers, instead of lecturing to them. Ways are sought to encourage dialogue about improved landuse among farmers and between farmers and government officials. To support this dialogue, it was considered essential to visualise land use. First attempts were made with maps and aerial photos, but most villagers could not understand them and the aerial photos were too small to permit discussions with the whole village. An approach was then developed which bases the discussion of landuse on a topographical model.

Community-Based Landuse Planning (Mohns 1990) works on the principle that decision-making about landuse changes rests mainly with the village community.

In order to make it feasible for a field-level extensionist to assist farmers in this process, it had to be broken down into practical steps easily comprehensible to farmers and extensionists. The project is still working on developing this approach during a pilot test phase in a few villages. The procedures currently applied involve the following six steps.

Village receives a model

A topographical model is handed over to the village community as their own property. It depicts the surrounding area which is presently being used by the villagers or is relevant to them in some other way.

The model is made from Styrofoam sheets, each layer representing a 20 m contour line. The horizontal scale of the model is 1:3000, which is sufficient to mark the location of individual fields of 0,5 ha size. The vertical scale is 1:2000. In order to accentuate the topography as the distinctive feature of the hilly landscape. A 1:50.000 topographical map proved to be sufficiently accurate as a basis for these models.

Before building a model, it is important to identify the present outer boundaries of all important resources being used by the village concerned. This includes not only cropland but also e.g. catchments for village water supply, grazing areas and common property resources.

Assessing state of resources

The next step involves recording the present state of the village resource base and identifying conflicts and prob-

lems. Based on the model, villagers and a team of government extensionists from various departments meet regularly to describe present land use, analyse the status of the natural resources and their present management, and identify related needs, conflicts and problems.

Various participatory techniques to appraise the present situation should be applied, e.g. village walks, transect walks, diagramming, mapping etc (as described in Mascarenhas et al 1991). The topographical model is a focal point of these appraisal activities, because this is where villagers and extensionists continually record and permanently store the information gained for further discussions.

During the meetings around the model, it is extremely important that villagers take the lead as much as possible. Normally government officials try to avoid situations which are not under their

control. The discussions around the model strengthen the position of the villagers, as they are more knowledgeable in describing the village resources and pointing out their location in the model.

The women are sometimes extremely keen on locating resources and describing their use. They are proud to demonstrate their knowledge, which is often more detailed and accurate than the men's. This is probably because the women spend more time working in the fields and collecting fuel, food plants and other common property resources. If women and also poorer income groups do not have a chance to actively

Farmers in *Ban Yaphanae* discussing options for improved land use. Women are especially keen and knowledgeable in describing the use of land resources and related problems in the topographical model.



participate in the process, important information cannot be collected, and important interests and conflicts will be ignored.

Besides facilitating the communication process, the role of government officials at this stage is to raise legal issues regarding land use, and to represent public and government interests e.g. the interests of lowlanders who might be affected by siltation or pollution of water coming from the highlands or government interest in preserving natural forests. Previously, government officers only came to the village in order to lecture people about their un-desired behaviour. Now these issues are one point for consideration among many others, and have to be balanced in order to reach arrangements agreeable to the community.

Agreeing on priority changes

Areas are identified where villagers consider it most worthwhile and necessary to address problems related to land use, and first activities are agreed upon. At present, these activities involve testing options to see whether they have potential to address one of the problems identified. Over time, farmers will gain more experience in actively selecting what is promising for them to try out.

If farmers do not have their own suggestions on how to try solving an identified problem, extensionists suggest innovations as entry points which allow great variation and flexibility, rather than as ready-made technology packages. The responsibility for verifying the validity of an innovation rests with the farmers, who will finally adopt new techniques only after they have experienced them as feasible and beneficial under their specific conditions.

Besides testing technical innovations, the agreed landuse change may involve re-installing or adjusting agreements and regulations on managing Common property resources. In some cases, the discussions around the topographical model have opened our eyes to the existence of indigenous management systems, e.g. for controlling the use of water, forest and wildlife resources

Planning the activities

Landuse changes and steps for implementing them are suggested by villagers. The extensionists' role is to assist in the planning process or to offer support for implementation in order to overcome constraints which villagers cannot overcome on their own.

Implementation plans are discussed in the village meeting in every detail and broken down into procedures with clear responsibilities of all parties involved. The activities agreed upon should be clear to everybody involved.

Visualising the steps at a place permanently accessible to everybody in the village makes them more binding, also regarding the contributions the outsiders have agreed to make.

Examples of such landuse changes are:

- protecting particular catchments for village water supply by agreeing on landuse restrictions',
- agreeing on regulations for managing and using forests which are sources of fuel, fodder or timber, or agreeing to improve these forests, if necessary,
- improving soil and water conservation practices in cultivated areas which are most relevant for the village.

Implementing agreed changes

Villagers implement the plans, only if necessary with contribution from the extension staff. If extensionists are involved, they must provide all promised contributions in the agreed Quantity, quality and time. Regular follow-up visits to monitor the progress and to identify unexpected obstacles and problems are also necessary. It is particularly valuable if the extensionists can inform about the experience of farmers in other villages. To be able to do this, extensionists need to develop an "exploratory altitude".

The landuse changes which farmers eventually implement often differ greatly from the ideas originally introduced. In most cases, ideas suggested by outsiders seem to be neat and orderly, whereas technologies adapted by farmers often appear chaotic and confused to outsiders. It is important that extensionists do not waste their time promoting more accuracy and neatness in areas where it is unnecessary, but rather learn to accept farmers' criteria and aesthetic perceptions

Monitoring and evaluation

Regular meetings are held with the whole village or farmer groups to monitor the progress of the activities and to evaluate their impact. The above-mentioned unorthodox adoption of landuse changes by farmers implies an enormous problem in making quantitative measurements of farmer adoption and/or yields. Therefore, results are quantified only when farmers have problems in assessing the impact of an innovation with their own criteria.

The farmers decide which of the options tested or activities implemented deserve to be pursued further, and which problems require what kind of further efforts. Thus the recurrent cycle of community-based landuse planning continues. As the villagers and extensionists advance in planning together, this cycle will not strictly follow the distinct steps described above: many will occur simultaneously at the same meeting.

New roles for extension

Attitudes and behaviour of government workers can gradually change, if they are exposed to situations where they have positive experience in working with farmers. If extensionists are to facilitate a continuous learning process rather than trying to transfer a technology, their skills and capabilities must be developed accordingly. In addition practical procedures and techniques in working with farmers have to be designed which can be applied by the average extensionist.

Planning landuse changes must be a continuous process, in which one step is based on the trust and experience gained during previous steps. If outsiders are involved, consistency and continuous personal commitment in the planning and implementation process are essential.

A serious problem of the approach is that in full village meetings, the village leaders representing a local elite tend to dominate the discussion and decision-making process in order to secure maximum benefits for their own group. Such problems still need to be addressed before we can conclude our last phase of this landuse planning approach.

Nevertheless, the experience thus far encourages further exploration of new ways in which government officials can work with highland farming communities. But expectations should not be exaggerated. Since the primary emphasis is on a shift in roles of extensionists, rather than on transferring technology, sufficient time must be given for gradual adjustment in people's attitudes and behaviours.

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