

# Meeting agricultural change in the Lao PDR

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For centuries, farmers in the Lao People's Democratic Republic have grown rice to meet their subsistence needs. As the country's most important crop, rice is grown under irrigated or rainfed conditions in the low-lying plain areas, and also in slash-and-burn systems in the mountainous areas of the country.

In recent decades, the lower lying hills have drawn a considerable number of new settlers from the mountainous areas of the country, mainly because of the availability of infrastructure and services (electricity, better education, transportation). This trend began during the early 1970s, when war-displaced mountain communities sought refuge and protection in these relatively peaceful areas. Migrants brought with them their age-old traditional agricultural practice of slash-and-burn. Productivity in this system is very dependent on soil fertility being restored, which in turn depends on the areas being left fallow for a number of years after cultivation has taken place. Slash-and-burn systems make optimal use of the natural resources, but this can only be sustained when there is sufficient land. Because of increased population pressure (natural population growth and new migrants) and greater need for agricultural produce, fallow periods have shortened, which means that rice production levels have decreased. This is the start of a vicious circle where farmers have to increase their slash-and-burn plot sizes to maintain production levels which results in increasingly shorter fallow periods.

Since the 1990s, the situation in this region and in the country as a whole has changed even more. Villagers' access to the outside world is improving, and consumer habits are changing, as are agricultural lifestyles. As a result, villagers expect higher incomes from agriculture, and increasingly demand products which were previously not part of the subsistence agriculture pattern. Additionally, barriers to foreign products are decreasing and the national government is encouraging the production of crops such as rubber, maize and soya beans, meant to meet the increasing demand from China, Thailand and Vietnam.

## Assisting farmers and promoting change

Within this changing social and economic environment, the Upland Agriculture Development Centre (UADC) has been trying to improve the living conditions of the population while adjusting itself to the new working environment. UADC is a local government institute aiming to assist farmers and promote changes in local agriculture. It operates in four districts of the Vientiane province, in the central region of the country. This area can be characterised geographically by having either broad valleys surrounded by steep mountains or rolling hilly areas connecting these larger valleys.

UADC started as a World Bank project whose emphasis was on irrigation as a means to reduce slash-and-burn agriculture. Since 1998, the Lao government has run the centre without external funding, following the same main objective: to assist local communities in finding more sustainable agriculture alternatives. Its aim is to increase agricultural output in financial terms, without affecting the natural environment. The promotion of small-scale fruit growing is nowadays a major focus. Another alternative has been the promotion of vegetable production to



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**Farmers practising planting techniques. Soil fertility is improved by digging large holes for planting and enriching the soil with compost and neem leaves to repel termites.**

meet the growing domestic demand. In this regard, UADC has supported the improvement of market facilities, thus encouraging a market oriented production of vegetables.

Throughout its institutional history, emphasising self-reliance and open access to knowledge has been the main methodology, but UADC's strategies have also changed. Whereas in the past only one or two farmers per village would be invited to trainings organised at their offices, nowadays trainings take place in the field, which allows all villagers to participate, be they educated or non-educated, male or female, rich or poor. But more importantly, the way extension is viewed and conducted by the UADC staff has been redirected. In the past, the centre relied heavily on top-down methods, which resulted in little knowledge and information being exchanged. This was partly because few new agricultural techniques were available, and partly because this information rarely reached the extension workers themselves. In cooperation with local district extension offices, the UADC has changed from an organisation which mainly provided crop production inputs to farmers, to an organisation which truly assists the rural population in improving their livelihoods. An important change has been opening up and learning from farmers, as well as promoting exchanges of information between farmers. Whereas the role of villagers was previously limited to listening to governmental messages, now the extension staff is keen on listening to, and -more importantly- discussing villagers' problems. Greater importance is now given to acknowledging and understanding local innovation processes, and consequently building on the information gathered.

UADC's "transformation" is a result of different factors. Limited financial means led to a "slowly-slowly" approach towards livelihood improvement, recognising that results can only be achieved after a consultation process with villagers and by

encouraging farmers' innovation. Its staff became gradually receptive to participatory approaches, and now gladly advocates them. Thus, even if the organisation itself did not opt for a participatory approach, the circumstances have certainly made UADC unique.

The results of this transformation are clearer when looking at the changes taking place in local agriculture. Extension workers promoting one alternative to slash-and-burn agriculture, fruit tree growing, faced many difficulties when trying to gain the farmers' interest. Previously, farmers were appointed and then expected to participate. This resulted in them not being motivated to manage the recently planted orchards, as only when the trees started bearing fruit did farmers see the need for maintenance. Nowadays, UADC staff visit farmers who started growing fruit on their own, without any external assistance, and learn from the farmer's successes and failures. With this approach, UADC has become known for its openness and willingness to support motivated farmers. Implementing trainings at fellow-farmers' orchards has led to a substantial increase in the interest in growing fruit trees as an alternative to slash-and-burn agriculture, as well as in a substantial improvement in the expertise of extension staff and farmers alike on how to recognise and spread innovations. Other positive results include the identification of high potential areas for fruit production, the development of various low-cost methods of irrigation, exploring the use of various green manures and encouraging the use of red ants as a plant protection method against pests. Another significant result of the changed attitude of UADC has been that farmers have started to visit the centre in search of advice, instead of waiting for the information to be brought to them.

### Increasing challenges

Farmers in the other villages where UADC works already see the benefits of using sustainable agriculture techniques. On the one hand, it is cheaper (by using local products there is little or no need for fertilizers or pesticides) and easier, as production is based on their own abilities and agricultural know-how. On the other hand, they see that they are producing vegetables and crops which they can consume themselves, and that they can sell. At the same time, slash-and-burn agricultural practices are evolving into more sustainable agricultural systems.

## Changes at the village level

The village of Ponsavang is 4 km away from UADC's main offices. UADC decided to work here as the general situation was clearly worse than in other villages in the area. Various participatory methods were used and the villagers drew up their own plans, defining what they expected to be done. These plans partly reflected their interest in improving their general living conditions (an access road, a school, electricity, drinking water), and partly focused on the possibilities of increasing the villagers' income. However, these possibilities were limited, as yields, in general, were decreasing. This forced villagers either to find work in other villages or in non-agricultural activities, or to encroach on forest areas located far away (>20km) from their village.

UADC then started up a programme aimed at supporting villagers to improve their general living situation, and at the same time initiated a programme assisting villagers to improve the use of their land. These programmes concentrated on growing fruit trees as a long term strategy, and on growing vegetables for the short term. Both programmes focused intensely on a low-external input agriculture. All villagers were invited to participate in training courses on the preparation of compost, on the burning of rice husks, on the production of various natural pesticides, and on the production of effective micro-organism extracts. Villagers were visited weekly by a UADC extension agent, and follow-up meetings were also organised.

The results were remarkable. While during the previous growing season (2001-2002) just one household had a vegetable garden, by the end of the 2002-2003 cropping season, all 39 households in Ponsavang were growing vegetables on a considerable scale. Villagers started selling their produce at various markets, while previously they were always forced to buy vegetables. New UADC programmes then introduced off-season vegetable growing, and in the following year farmers expanded their vegetable gardens even more. As a consequence, the vegetable programme was extended to four other villages and participation is now, in general, a key feature of UADC's work.

The challenges ahead, however, are many, resulting from the general context in which rural communities are found in the Lao PDR: continuous migration, limited sources of income, lower trade barriers and economic competition. In such a context, the need for adjusting and encouraging innovation as the main organisational instrument becomes more apparent. An open organisational structure, where staff lower in the traditional hierarchy contribute to the overall direction of the work, is crucial. This means that the institutes which assist rural development need to change as well. Mainstream policies seem to result in little overall change, or in a model that mainly assists the wealthier farmers. The preferred approach should rather be one in which the institutes are able to recognise and encourage innovation at a local level, trying to meet the needs of all. The UADC has now faced up to this and is able to adjust its work so as to meet the new and constantly changing challenges. It is thus in a much better position to support the transition of farmers towards a sustainable agriculture.

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**Farmers and UADC extension staff listen to a farmer explaining how the irrigation system he designed works.**



Photo: Author