

# AAINews

APPROPRIATE AGRICULTURE INTERNATIONAL  
CO., LTD

1-2-3-403 Haramachida, Machida, Tokyo, 194-0013 JAPAN.  
TEL/FAX:+81-42-725-6250 Email: aai@koushu.co.jp

## On the banks of the Amazon

Though I have been involved in a number of development studies in different countries, it was my first time to take off from Narita Airport towards the east. The current study was conducted for the development of livestock farming in the northern part of Tocantins State, which is located between the southern edge of the Amazon region and the semi-arid area called Cerrado. The main agricultural activity of the area is livestock farming and a handful of rich farmers, who each own several thousand hectares of land, are engaged mainly in beef production. At the same time, a large number of poor farmers practice slash-and-burn farming to produce food for their own consumption. The cleared land is subsequently turned into pasture land. This style of agricultural activity has been a major environmental problem, therefore, the main task of our mission this time was to find a way on the effective utilization of the already cleared and cultivated grassland, while protecting the remaining forests.

Bearing that task in mind, I went around the grasslands within the targeted area, and quite often noticed the natural vegetation of mainly palm species such as babassu palm and buriti palm. The babassu palm in particular is listed in the "Promising tropical plant species of the 21st century", as its potential economic value is thought to be quite high. Its seed is rich in oil, while its fruit shell can also be utilized as fuel. The trunk provides construction materials, the leaves can be made into floor mats, hats, baskets and so on. Presently its value as a source of oil is apparently going down, but in the future more demand can be expected for the edible core, the palmetto. Likewise the palms will be valued as a source of activated charcoal. At the same time, from a botanical point of view it is classified as a precious species, which requires protection. However, in certain slash-and-burned grassland areas babassu palm, whose growth is far more vigorous than other species in the same area, dominates the local vegetation to the extent that it makes the area look like a palm seedling nursery. In other words, for proper conservation of this species, appropriate management such as thinning is necessary. If such unique plant resources specially grown in the area can be well utilized on an industrial scale, it may very well contribute to increasing cash income and improving the livelihoods of poor farmers. This would also lead to conservation of this precious palm species, attaining the task of balancing agricultural development and environmental conservation. The catch-phrase "the future of Tocantins lies beyond the babassu palm", does not really sound like an exaggeration any more.

However, in order to utilize babassu palm effectively to bring some income gain to the local community, a number of problems related to harvesting, taking out seed and processing need to be overcome first. A group led by a researcher of Japanese-descent at the food technology department of a university in Tocantins State has been studying methods of babassu palm utilization, including oil extraction from seeds. They are trying their best despite a limited budget, and I strongly felt that any small support for their efforts would be a great encouragement for them.

My first visit to a Latino country thus ended. With the sun sinking in the Amazon and the rhythm of samba in the air, and a glass of "pinga", the locally produced sugarcane rum in my hand, a thought came to my mind: "When I come to Brazil next time, I would like to start a rural community development project using babassu palm resources."

(By Ohnuma, on the banks of the Amazon, May 2001).



Young babassu palm trees growing in pasture



Vigorously growing babassu palm

## *In Search of the Blue Bird; What is it that you long for?*

### **Part 4: Non-commercial farming villages**

"Nobody has ever done anything bad. We were simply looking for the Blue Bird."

One of the most serious problems that local areas today are facing, is the unification which is reaching out to every corner of the world due to the global economic system (WTO) which promotes mass production and mass consumption of commodities under the name of economic liberalization. The associated environmental or resource problems include the growing structure in which the resources are brought from rural villages in the South to urban areas and developed countries in the North as raw materials for industrial production and food stuffs, while only a damaged environment is left behind in the farms and fishing villages. While the school of thought which approves of such commodity flow on a global scale is very strong, at the other end of the pole is the idea of focusing on a more local material flow, to supply and consume goods within a very limited locality.

In terms of agricultural production, the trend of globalization is to replace the traditional agricultural activities of a local area with monoculture cash crop cultivation in pursuit of agricultural modernization and economic feasibility. The new agricultural modification accompanying such cash crop cultivation can cause not only environmental degradation in the locality, but also such other problems as dependency on the outside world and impoverishment. That is, the farmers who used to practice agriculture within the independent material flow of the locality start being dependent on the introduction of new materials from outside industry sectors, which weakens their agricultural and economic independence. Those farmers who have lost their independence, or in other words are now subjugated by outside forces, are without freedom in their farming activities. Then, however enriched materially, they cannot be considered rich and content in the real sense of the words. Moreover, the environmental degradation would in due course destroy the agricultural sustainability in the locality, which in turn would threaten people's livelihood in the local community.

Some farming villages avoid taking such a course, refusing to produce any commercial crops. Introduction of cash crops for the sake of economic and materialistic gain does not necessarily bring increased income for farmers: such change may lead to drastic falls in productivity due to land degradation, outbreak of replant failure and weakened adjustability to droughts, or to low prices of the produced crops due to the competitiveness of the international market. Furthermore, persistent pursuit of economic profit turns a blind eye to agricultural sustainability and environmental conservation, leaving wasted farmlands as an aftermath of development. Realizing such a danger, some villages in Thailand and Laos have started "farming for livelihood", namely engaging in agricultural activities which sustain themselves within the local ecosystem and material flow.

In the past, agricultural production everywhere was conducted in accordance with the local environmental conditions, making use of the traditional local culture and knowledge which had been inherited from generation to generation. Resources management based on the local material flow, which enables the local community to conserve and utilize its local natural resources for the sake of its own locality, would rely only on the resources and energy within the local farming society, and can realize a sustainable livelihood. The non-commercial farming villages are trying to do just this in practice. It is not an attempt to go back to the self-sufficient local economy of the past. What needs to be aimed at is achieving the livelihood which is suitable for present-day circumstances. And, this is an ideal not only for developing countries.



"So, it is not that business is brisk. But it is also not the case that we are having difficulty in living...how shall I put it? We don't make money but still we have sufficient to eat. That is what is different from the past."

Ryu Murakami; "Exodus from the Country of Hope"

## ***Agricultural extension and training for agricultural extension agents in Syria***

### **Part 4: Agricultural extension and improvement plan in Syria**

In this series I have reported about the significance of agricultural extension, the current system of the agricultural extension system and the training of extension staff in Syria. In this issue I would like to give a report on my experience in Syria as an expert for three years from 1994, when I worked on the agricultural extension improvement plan on the request of the Syrian government's Directorate of Agricultural Extension of the Ministry of Agriculture and Agrarian Reform.

Although the government of Syria makes it a top priority in its national development policy to increase agricultural production, the country has not achieved food self-sufficiency due to still low levels of productivity, the increase in population and an associated increase in food consumption. The Directorate of Agricultural Extension is a fairly large organization with 800 extension units and some 4,000 staff across the country. If effectively and efficiently managed, the Directorate is sure to play an important role in the agricultural development of the country. However, at present the collaboration among different directorates is rather weak, and for instance the information collected at the Soil Directorate and the Statistics Directorate is not communicated to, and not at all utilized for the activities of agricultural extension by the Directorate for Agricultural Extension. Moreover, the network ranging from the head office in the capital, its branches in provinces and counties to extension offices at the village level is not functioning effectively. To this background, I was invited as an expert to improve the agricultural extension system as a whole, by giving technical advice and training to farmers, training extension staff and drawing up new extension planning.

Based on discussions with the Directorate for Agricultural Extension staff, during my mission I got myself engaged in various activities aiming at: (i) systematization of basic information needed for agricultural extension activities; (ii) improvement of the agricultural extension planning based on the results of the on-going farm survey; and (iii) technological development for sustainable agriculture. Regarding the systematization of basic information, we got all the extension units and the areas under their responsibility plotted on the map, while incorporating the soil map, climatic division and other statistical information into a GIS system, so that the extension staff can easily grasp the characteristics of the areas under their charge. As for improvement of the agricultural extension planning, first of all we introduced computers for conducting farm surveys and analyzing the results. A unified format according to crop types was employed for the survey, and now data could be collected and analyzed at the district, province and national levels. With this system it became easy to understand the geographic distribution of farmers experiencing different problems at different levels. Moreover, through the technological development activities extension staff leaned to investigate the problems of irrigation management and crop rotation scheme which had been causing salinization of soil, and to see what water-harvesting farming and agroforestry were like.

Though my mission in Syria was only limited to three years, through the collaboration with such related bureaus as the Soil Directorate and Irrigation Directorate for systematization of basic information, staff members of different directorates started to communicate with each other. In addition, as whenever possible I took some head office staff in the capital to extension offices in the field, it made a good opportunity for them also to learn what difficulties the field staff were facing day by day. In this way, I hope I as an overseas expert could contribute to activating the horizontal and vertical relationships surrounding the head office of the Directorate of Agricultural Extension. I also hope that the information and equipment provided to agricultural extension staff during my mission will serve to upgrade the quality of the staff themselves, and that there will be more and more staff members well trusted by farmers. And I would sincerely like to expect that the results coming out of my three-year mission will eventually lead to more active agricultural extension activities in Syria in the future.



**Training in irrigation**



**Training in handicrafts**



**Training in crop cultivation**



## Mini-Series: Permaculture element technology (3)

### Part 3: Flora combination and Fauna utilization

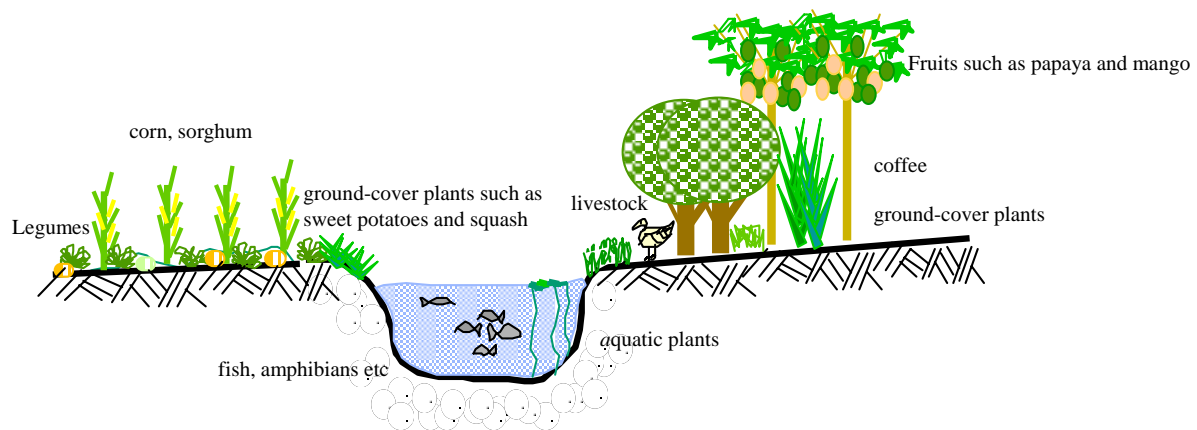
In this issue we would like to discuss the combination of plant species (fruits, cereals and vegetables) and the role of animals in the permaculture system.

In the first part of this series the basic principles of designing a permaculture plot were discussed. Among them, achieving a small-scale intensive system and biological diversity, suggested that a major part of the land should be utilized and managed effectively with multi-crop cultivation as opposed to monoculture, combining different classes of useful plant species. By doing this it is expected to promote growth of the planted species and increase pest resiliency, saving effort necessary for management. The combination of plant species which have positive effects on each other when cultivated together, is called "companion plants", often found for instance in annual vegetables and herb gardens. However, on the other hand there are combinations which work negatively. It is also possible to have spatial combination, such as planting leguminous plants (tree or grass types) under fruits trees or cultivating cereals like corn and millet wherever there is enough sunshine, rather than making clear divisions between orchards, cereal fields and so on. Moreover, intercropping such as growing groundnuts and pumpkins etc. in corn fields is also possible. There is no absolute established set of techniques in permaculture, and it does not matter whether the field is attended with a ploughing or non-ploughing cultivation scheme. Techniques can vary depending on the conditions of the place and the cultivator's policy.



It is also possible to increase management efficiency by allowing livestock to roam around in the fields. When fruit trees are still young, small poultry could help prevent weeds growing by scratching the soil surface, while at the same time providing some fertilizer. Some years later, when the fruit trees and other plants have become big enough not to be eaten up or stamped upon, larger animals such as pigs, goats and cows can be let free to graze. By introducing animals in the permaculture system, the natural circulation of nutrition and other substances can be promoted. Other than producing fertilizers, preventing weeds and eradicating pests, animals can provide foods for humans such as eggs, milk and honey.

Having some water body in the plot could also lead to increased biodiversity. A water body can accommodate not only fish but also other animals such as shellfish, shrimps and amphibians, and aquatic plants such as algae. Fish cultivation would be possible in a water body such as a pond or a lake, which may also host some water birds. Also, such water bodies could serve to retain moisture in the surrounding area.



**Small-scale intensive system and biological**