

AGROFORESTRY OFFERS A PROMISING FUTURE

by
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The Republic of Palau seems to be caught in an increasing dependence of imported items such as food and building materials. This has not always been the case. For thousands of years, Palauans were able to feed themselves in a sustainable way. They were healthy, active, lived long and cooperated to build large public projects. This changed upon contact with the western world.

This change quickly became apparent to me as Peace Corps Volunteer assigned to a farmers' cooperative. The cooperative sprung out of an ambitious experiment in homesteading. It had a history of production problems—uneven, either too much or too little, and limited selections. Most of the farmers were growing introduced vegetables, increasingly abandoning not only traditional crops but traditional and sound crop production practices. Analysis revealed those farmers which combined vegetables with tree crops had a higher and more steady income. So I began looking at ways of combining vegetables and tree crops in a more integrated way. I began this by relating Palauan mixed cropping practices with reading about other systems in other countries such as Indonesia, Philippines and Malaysia.

Apparently the indigenous system of agriculture knowledge is lost, slipping away or closely guarded. Traditional education was devalued, ignored and discouraged by formal educators. And younger people are increasingly disinterested in agriculture resulting in less opportunities to pass knowledge.

I was fortunate enough to have had the opportunity to observe some old abandoned villages on the west coast. It was noticeable that certain trees keep appearing near the stone platforms—like football fruit, some species of *Eugenia*, Polynesian almond, and beetle-nut. Meeting houses, bathing places, residences, were often surrounded by useful trees. Moreover, there seemed to be more of a pattern or pairing of trees than today. Further mapping of these sites will yield more valuable information.

These trees were not just for food but also for medicine, ceremonies, magic and to tell times of the year and month, and possibly other cycles. As I mentioned, most of this knowledge seems to be slipping away. Some of this knowledge may be regained from documents of the foreign administrators. Spanish and German documentation seem particularly promising. Presently, I have arranged for two German students through the programme to translate some of these documents.

On the basis of this material we aim to interview some elderly people to verify, validate and hopefully expand the knowledge. It will provide us with a starting point to ask intelligent questions and mitigate some of the constraints of guarded knowledge and 'know-it-all'.

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Palau's taro patch system, in my opinion, is a unique agroforestry system. Traditionally, it is tended by women and has been sustainable for hundreds of years. Although the system somehow differs from village to village, all the patches I have seen utilize trees/shrubs. Trees and bananas are planted or allowed to grow on the perimeter and footpaths between the patches. These trees are mainly used for green manure and mulching. But trees are also used for medicine (especially to stop bleeding), ceremonies, 'guava' for food, and sometimes 'telentund' (*Leucaena leucocephala*) for firewood.

The taro patch system may offer us an agroforestry system we can use as a model. It is generally easier to introduce new elements into a familiar system than to introduce a whole new system. Also it is easier to introduce elements from a familiar system into another. For instance, the element of green manure exists in the taro patch system, introducing it to upland farms is made easier as it can be pointed out that it works in the taro patch. However, one constraint we face is that the knowledge of taro production is closely guarded, and generally passed from mother to the most industrious daughter. On the whole the taro patch is reserved for women and based on my own experience it is physically the most demanding food production system in Palau.

My first experiment in agroforestry involved trying to halt the erosion on steps of a garden. I planted a single line of giant ipil (*Leucaena*) about 12 inches apart with a line of lemongrass below. The giant ipil did not halt the erosion and was no good for coppicing. However, the lemongrass, after it was established, stopped the erosion but did not improve the soil.

Fortunately, I had two important opportunities to improve my knowledge of agroforestry. The first was a study visit to the Philippines, sponsored by UNICEF, and the other an in-country agroforestry training course, sponsored by the United States Forest Service and the Republic of Palau.

In the Philippines, I visited the Sloping Agricultural Land Technology Project at the Baptists Rural Life Centre in Mindanao, and the World Neighbor's Soil and Water Conservation Project in Cebu. I learned the hands-on approach and brought back some treated seeds. To ensure survivability of the seed, I distributed half of it to the local experiment station. The introduced trees seem to grow faster than the local varieties. If resources become available, we would like to test this, as promoting familiar trees would be simpler.

At the local college—Micronesian Occupational College—we started a joint Sloping Agriculture Project focussing on terracing and alley-cropping trees. *Acacia villosa*, *Flemingia congesta*, and lemongrass were planted. They seem to be compatible with local conditions. *A. villosa* was preferred because it breaks down faster. However, experiments with pigeon pea resulted in its preference due to its fast growth and regrowth. We are encouraging the planting of at least two types of alley-crops, in case one crop is wiped out due to external factors such as pests. The experiment received favourable responses from students.

Our vision for the future is that we hope to develop an agroforestry system for the uplands, which builds upon traditional knowledge but also incorporates elements of other viable systems. We would first focus on fully utilizing the land around the house. Only when this land is fully under control would we recommend outward expansion. Tree crops would be the centre of the system in the initial years with food and cash crops spaced between the tree crop. As the tree crop matures, short-term cash crops may be phased out. In the wetlands, the taro patch system would

hopefully be modified to include more green manure and food crops, thereby reducing time used in collecting and transporting green manure.

To achieve our vision of the future, we need not only concern ourselves with the technical aspects but also with the socio-economic aspects. We have to encourage young people to participate actively in the family food production. We need to encourage self-sufficiency, empowerment and cultural identity. We need to return to traditional agriculture's promotion of social accountability and self-reliance and move away from the scientific agriculture's promotion of individualism and specialisation.
