

# Sustainable Management of Local Resources and Traditional Practices

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**H**ow to improve productivity of local resources while maintaining environmental sustainability? This is the key question behind the term development and the notion of improvement of productivity: development and improvement with regard to what? for who's advantage?

For local populations the idea is to participate in and benefit from the modern economic network.

At present we see that the introduction of new technologies could be harmful for the environment. At the same time farmers world-wide become more and more dependent on international bio-chemical producers for herbicides, pesticides fertilizer and the seeds adapted to them, in particular with GM products. For this reason we can no longer consider modern technology as always bringing progress.

With the concept of sustainable development the sustainability, the concern is not only for sustainability of the environment but also of society.

Before I discuss sustainability of the environment, which is the topic of my paper, I would like first to address the issue of sustainability for society, because I think this is of utmost importance for Eastern Indonesia. The problem is how to respect the identity of local societies which compose the Indonesian Nation.

The problem is not only an Indonesian one but a global problem. Peoples around the world are reacting to the phenomenon of globalisation. One facet of these reactions is to defend local values.

Even in France we speak of a « unity in diversity » the French equivalent of *Bhinneka Tunggal Ika*. This expression is also used for Europe as a whole.

In France we have now a big problem with Corsica a small island and territory of France.

But in France we have a much experience of this problem. If I speak of this problem it is because, from my point of view, it holds a similarity with the Indonesian problem even if on a smaller scale and in a different ecological and socio-economical context.

Indonesian colleagues who have travelled with me to France were surprised to find the great diversity between places so near to one another. This diversity can be seen geographically but also in terms of environmental management, and in differences in settlement patterns and in the architecture of the houses.

People in France are very diversified because until the first millennium France was a cross-roads for invaders who came from all directions. The influences on French culture were varied.

Evangelisation came very early but the old churches were very often built on the sites held sacred by earlier societies.

Centralisation began very early when France was a kingdom but continued in the same way after the French revolution with the republic and the notion of the nation-state. The will of centralisation was sometimes too strong. At the beginning of the 20th century, it was forbidden to speak one's maternal language at school. Nowadays people choose to learn local languages such as *corse*, *breton* or *basque*. During many years local cooking and the different forms of cheese were the only shelter for local identity. This is perhaps why the struggle against « *mal-bouffe* » and the insistence on organic foods is so important in France. French people, such as *José Bové*, played a part in the world-wide movement against globalisation, for instance in *Seattle*.

It is important to recognize that there was little evolution of agricultural methods in France until the middle of the 20th century and in the 1980's old unmodernised farms still could be found.

It is not my intention to present France as the perfect model, because it is not, however the French experiences raise some points for reflexion.

For instance, the creation of several Regional Natural Parks which include inhabited zones and the National Natural Parks and the first national Park with people residing in the core area.

In the regional natural parks there is an added value of tourism which is in part an eco-tourism of special landscapes and agro-ecosystems associated with particular food productions. The result is a preservation of spontaneous and domesticated bio-diversity.

I would like to point out that my French field work is in the inhabited National Parc (*Parc National des Cévennes*) on a karstic plateau just near the place where living *José Bové* is now living.

In this National Park the memory of the religious war between Catholics and Protestants is kept alive through tourism.

The Rio conference produced the wide-spread slogan of : « think globally to act locally » However, it is in cases such as the ones just mentioned that the importance of local action becomes apparent and produces the equally important slogan of « think locally to act in a global context ».

Global context begins with the nation-state, and each nation-state is a part of the global economy.

For this reason I think that this principle corresponds to the present needs of Indonesia: maintaining unity while giving more autonomy to the local peoples.

Coming back to my topic: How to improve productivity of local resource while maintaining environmental sustainability?

This objective needs various conditions in order to be achieved: it is necessary to take into account the local context from both the ecologic point of view and the socio-cultural point of view. This requires interdisciplinary research: that is research which inter-links ecological, agronomical and human sciences data.

The inventory of local resources ought to take into account local knowledge of plants, animals and management practices. This knowledge has been elaborated generation after generation and takes into account, for instance, climate irregularities and the fluctuations of animal populations. For this reason the local knowledge is often more complete than scientific knowledge based on research carried out over a period of a few years.

Numerous development programs failed because they applied general principles elaborated in different ecological and socio-economic contexts. For this reason it is necessary to study first the local context and the local practices and technology that have proved their efficiency due to the fact that they were not static but were progressively adapted to the ecological and socio-economic changes and tested over the long term . For this reason I prefer to talk about local practices and not traditional because some people think that traditional is equals static.

The analysis of the local context is particularly important for those regions of interest to us here: Sulawesi, Maluku and Papua/Irian Jaya where there is a large ecological biodiversity: there are areas where average rainfalls are high and others drier; some areas are near the sea and others are elevated . The societies are also very diverse and their resources are not the same.

The objective of interdisciplinary research must be the study of knowledge and know-how used in the use of resources but first we should study the local system of ownership of the land including plants and animals of the region . Not only the system of ownership but also the cu

Then all decisions concerning the improvement of productivity while maintaining environmental sustainability, should be taken after discussion and negotiation with the local people.

I will develop these different points through using my experiences gathered during research in eastern Indonesia;

my own research and the research done by my Indonesian colleagues who collected data for their PhDs presented in Paris.

### **Local concepts of rights to land and resources**

In eastern Indonesia no matter what the religion of the people (Islam, Christian or Hindu), the living are not the owners of the land as is the case in western law . The ancestors are generally the true owner of the land and their descendants have only the right to use the land; Consequently, it is forbidden to sell the land and there are very strict rules for its use .

Plants and animals are not considered a resource in the western sense. They are living beings with which human beings have a relationship. There exists as well a relationship between plants, animals and ancestors. Some animals can be an emanation of the ancestors. Such is the case for the eels in a pond of the Alune people of Seram. For the Alune the ancestors own the trees and particularly the trees in their agroforests. Although the sagu-trees grow spontaneously the Alune consider they were planted by their ancestors.

It is impossible to exploit such forests without discussion with the local persons responsible for their management. But for this first we must find who are the responsible persons. For each Alune village, for instance, it is the descendant lineage of the ancestors who arrived first on the territory. Those ancestors then gave part of this territory to new lineages coming in. But for the whole territory of central Alune it is the Alune of the inner part that are regarded as adek and have the ritual task of protecting the land.

It is always in relation to the whole society that relationships between the living and the dead are established as well as the customary rules for land, plants and animals. In every local society there is a council of elders or responsible persons of rituals that make the decision.

Rules for accession to the land depend on agricultural methods. For instance swidden cultivation (ladang berpindah) requires large areas to lie fallow for long periods of time . People may have also the right to hunt and gather.

We ought to take in account all of these rules before planning any development project

All of these factors must be taken into account in order to improve productivity. Often the Administration only recognises the rights of farmers who working the land, which can in turn cause abusive land clearing by the local populations who fear dispossession, even more so for the land which can't be cultivated «Karena tenaga tidak cukup».

Also, it is essential to respect the taboos regarding cutting around sacred sites which can trigger a policy of conserving biodiversity.

### **Knowledge and local knowledge**

To improve productivity, it is essential that input is founded upon the local knowledge that people have of their

environment and of the plants they use.

As for domestic resources, the local varieties which are already adapted to the ecological conditions and to the needs of the people should be improved rather than introducing plant varieties from elsewhere - which can often require too much fertiliser and likewise be too sensitive to insect or disease.

The same goes for the introduction of new farming techniques, for which it is best to draw upon local experience. For example, sweet potato cultivation in the lower Balcon Valley in Irian Jaya which recuperates the mud from the «catch-drains, or drainage trenches» for a fertiliser can also be used for the cultivation of vegetables meant for trade.

Cultivation on «Ladang» does not harm the environment if one ensures there is enough land to allow for the restoration of the biomass before recommencing cultivation. But if the land thins, it is better to plant permanent crops which will improve the productivity of an area. However, this requires fertilisation.

Fertility of Ladang can be maintained by planting trees, especially leguminous plants which fill the role of the seed carriers and allow rapid restoration of the vegetal cover. Another possible method is to only partially cut down the trees and to leave their stumps, for regrowth. This is practiced amongst numerous East Indonesian peoples.

Cash crops are another way of improving productivity, but it is essential to maintain a food - producing agriculture locally to ensure inhabitants are not tributaries of the cash-crop revenues which are unstable.

Precautions must also be taken for the farming of spontaneously-growing resources, in particular forest resources.

In tropical countries, clear-cutting is especially dangerous. There must be suitable resource planning which allows the forest to restore itself spontaneously or which includes the planting of useful species.

For this it would be useful to focus on local agro-forestry as a model and to study the local peoples methods of forest restoration. If we take the example of the Alunes of Seram, the trees are sown in the forest and once these seeds have germinated and regrowth is apparent, the people will transport the shoots to their own agroforests.

These agroforestry practices entail a progressive domestication of a large part of the territory and allow for a smaller area of land to be designated as a reserve.

In conclusion, I insist on the necessity of discussions and negotiations with the local peoples while planning for development. Especially in the current situation in Indonesia. It is essential that the local population are convinced that they themselves will benefit from the development scheme and that outsiders to the local society will not be the sole beneficiaries.

At present, people around the world are aware that the sustainable management of local resources is impossible

without the participation of the local population.

For discussions and negotiations it is useful to be inspired by local decision-making practices, with the condition of having sufficient knowledge and precious research on who is best-suited for which responsibilities in a given domain.

This problem of negotiations and decision-making is a delicate one, because the administration often chooses leaders who are not locally recognised.

Western democracy with elections and majority decision-making is not always the best action to adopt while respecting local values.