

**“Here is the farm but where is the soil?”**

**A Draft Policy Note**

**On upland farming in Southern Mindanao**

**By**

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## Introduction

The uplands as integral part of the ecological system, with its direct link with the lowland and coastal zones, deserve conservation for the survival and development of a country like the Philippines. Its destruction will surely result to decreasing production and revenues in the prime lowland ecological zones. Furthermore, undeveloped uplands in the Philippines are the locale of destabilising forces against peace and security (Castillo 1994).

The Mindanao uplands have a huge share of development challenges due to the magnitude of destruction from its original state. Since the magnitude of upland destruction has to be more or less equated with ameliorative efforts, a historical account of what has happened with the Mindanao uplands should be considered.

Mindanao uplands fifty years ago were covered with primary forests and inhabited by Indigenous Peoples (IPs). Upland watersheds were fully intact and very rich in biodiversity. Inasmuch as environmental conditions in the uplands are directly linked to those in the lowlands and coastal areas, the lowland environment was sound and coastal areas were affluent with fish population owing from the productive coral reefs and mangroves.

In recent decades, this well-preserved interdependent natural environment of upland, lowland and coastal area has dramatically changed for the worst. One reason for this is the indiscriminate legal and illegal logging in the past. Also the population pressure has forced lowlanders to occupy areas already cleared through logging and encouraged unsustainable farming there. Another reason may have been the taking over by large agri-business concerns of vast tracks of gently sloping lowland plantations, forcing many poor communities with no other option than to expand cultivation onto steep to very steep slopes. The original IP inhabitants practiced the slash and burn farming while the migrant lowlanders practiced lowland technologies not suited to steep uplands resulting to severe soil erosion, low productivity and very low quality of life. The fierce erosion has also resulted in extreme “poverty” in terms of biodiversity in the Mindanao uplands<sup>1</sup>. Furthermore, the lowland dwellers, farmers and fishermen have been suffering badly due to the damaging effects of severe floods and siltation.

Presently, Mindanao uplands including natural parks are almost all inhabited and used as farmlands with less regard to prevention from damage. The situation is very serious particularly to immediate stakeholders –the people and the local leaders- who should agree on and enforce appropriate upland land use, institute the practice of sustainable agriculture, reforest suitable areas, and protect remaining patches of forest. The critical issue however, is how to mobilise resources and build capabilities to make the upland farmers protect their land and generate sufficient income.

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<sup>1</sup> See Haribon Foundation, Power Point Presentation “ The Scary Story”, 2001

Some programmes, foremost of which is the Upland Development Programme (UDP) in Southern Mindanao (Region XI and XII), have addressed the serious concerns of Mindanao upland degradation. The problem is huge though and cannot be solved within a short period of time and requires major expense and concerted efforts to ameliorate such conditions.

The Upland Development Programme in Region XI in Southern Mindanao (UDP) is created in response to the urgent need to address the above concerns. The problem is huge and cannot be solved within a short time or in one go. It would imply enormous expenses to restore the uplands as they were. It is also totally unrealistic to assume that restoration to its original state could be achieved; neither in terms of the magnitude of investment needed nor in terms of present realities such as the already non-reversible state of deforestation and the continuous influx of migrants. What may be realistic within the present context is to preserve what is left and gradually rehabilitate the upland watersheds. Even this approach will not be that easy to achieve, taking the limited local available investment funds into account. Hence the Government of the Philippines (GOP) with support from the European Union (EU) have agreed to jointly develop and test a model that would show how sustainable upland development can be achieved within locally available capacities. It would demonstrate **how upland farmers could protect and at the same time increase incomes** from the watershed areas through applying sustainable farming practices.

### **State of affair in respect of the modelling process**

Since a few years ago the UDP introduced the concept of diversified farming as a possible solution on addressing the two concerns of proper resource management by and increasing incomes of the upland farmers. Diversified farming under UDP means encouraging upland farmers to apply proper protection measures and grow suitable crops through extension services, training, exposure to outstanding upland farms and minor farm inputs particularly fruit tree crop seedlings. The underlying assumption is that if upland farmers would have a good and productive farm well protected against erosion, the need to further encroach on forestlands would vanish.

The Programme started by facilitating one farmer per barangay with establishing such a model farm. Later on the programme expanded its support to one model farm per sitio. Presently 5 farmers per sitio are supported and several more are proposed. The concept is that the first batches of model farms will act as a showcase and learning site for the remaining farmers in the sitio.

Although many nice farms that take care of the two concerns exist by now, unfortunately the results and impact of the whole programme are mixed. During the Mid Term Review (MTR) Mission the need to be much stricter in relating the type of crops to the steepness of the slopes and soil type and depth was emphasized again. The reason is that many farmers were still growing corn and other short terms crops on very steep slopes where tree crops would be appropriate. Also the protection measures farmers put in place against erosion, were often insufficient.

Last year as a follow up of the recommendations by the MTR mission, the Programme introduced Slope Treatment Oriented Practices or STOP and embarked on a massive training programme for extension workers to help farmers to do the right thing in respect of STOP.

To see the impact and effectiveness of the STOP trainings, recently a PMO team went to assess and validate DFS farms to be supported by the Programme in some provinces. Concerned farmers are supposed to have been coached by the trained extension workers in STOP. The team visited many of these farms that were proposed to the Co-Directors for DFS support as well as existing ones supported in earlier stages by the Programme. The new farms and farmers proposed for support should, according to the Programme's guidelines, have been properly prepared so the DFS support from UDP can be extended timely and with maximum effect. So farmers should have been on exposure trips and have received hands-on training on the DFS concept and their farms should be ready to receive Programme support including the putting up of the appropriate Soil and Water Conservation Measures (SWCMs).

## **Findings**

Awareness on STOP has increased considerably among the extension workers like the Agricultural Technicians (ATs) and the Barangay Extension workers (BEWs). They seem to know what to advise the farmers in this respect. However the situation on the farms is different. Although a number of the farms visited, particularly the earlier supported ones, were on less steep slopes and hence less erosion prone, maintenance of the SWCMs was often not that impressive. For example there are still gaps in the hedgerows and Natural Vegetative Strips (NVS) leading to loss of topsoil during heavy rains. Also the distance between the hedgerows or NVS is frequently too wide and some of the earlier established farms are not yet consistent with STOP conditions.

The situation with the proposed farms for support is however more worrying. It is clear that the majority of our DFS farmers are not/cannot follow the STOP advice. The majority of the farms visited were located on steep to very steep slopes and not suitable for DFS in its present form. Slopes measured range between 50-70%. The team observed that such farms was the rule and not the exception in many sitios. Somehow the uneasy feeling was creeping in that because of the UDP support, it may even be that farmers expand to such slopes in stead of further improving there existing farms. If true this would be unfortunate and damaging as later on the UDP may be blamed for "encouraging" upland folks to destroy the natural resources in the watersheds. What UDP has been encouraging so far, including the use of the STOP guidelines, is actually still in violation with rules and regulations of the DENR which does not really allow growing of corn and similar cash crops on slopes above 18% while UDP allows such crops up to 45% on the condition of proper soil and water conservation and in combination with tree crops. But neither the DENR nor the LGU does enforce these rules and regulations for reasons unknown.

Long discussions were held with the extension workers, local government officials and UDP staff, what is going wrong and what to do.

What came out is that apparently in many areas the only land available for upland farmers is on these steep slopes of more than 50%. Possible reasons mentioned are the unavailability of other, flatter land and that the farmer has no alternative due to poverty and subsistence concerns, family expansion, etc. and really needs to grow corn for his daily living, at least until the time his/her fruit trees bear fruit.

## **Policy**

It seems unwise for UDP to ignore the problem. Telling the farmers you cannot do that and hoping that s/he will refrain from growing corn on 50% plus slopes, perhaps even without any protection, is naive and counterproductive in the sense that it will only accelerate Armageddon for the upland folks.

Of course UDP must continue to encourage the upland farmers to stay away from these steep slopes and stop encroaching further onto forestland with short-term crops like corn. On the other hand it seems better to properly understand and then accept the problem and find an acceptable solution to tackle the issue.

The proposal is to accept the reality that the coming decade upland farmers will continue to expand agriculture on steep slopes in Mindanao.

Two issues need to be addressed then.

One is to have an effective agreement between the community, barangay and municipal government and the DENR/NCIP, that certain areas in the barangay will be declared protected area and its protection to be ensured by a simple co-management MOA and scheme in which responsibilities of parties are detailed. Such a MOA and scheme would need full endorsement and resource allocation and strict enforcement by the stakeholders and linked to any UDP support for upland farming.

The other issue is that the rest of the area in the barangay would perhaps be declared by the LGU/DENR/NCIP as agricultural land, for settlements etc. In respect of agricultural development there should be brgy and municipal ordinances instructing eligible farmers that they can only be allowed to farm and expand their farm land if certain conditions are fulfilled such as having in place appropriate protection against erosion and the emphasis to be on growing fruit tree crops.

Although UDP would still severely discourage growing of non-tree crops on slopes above 45%, it would allow DFS support to those farmers that really have no alternative farmland. Needless to say that extension staff should seriously validate those farmers in this respect before any UDP support can be extended.

Within this framework it is required to modify the STOP policy in respect of, particularly corn farming, on the steeper slopes.

So far it seems that the only technology for corn farming on steep slopes is terracing like in the Cordilleras for example, there where the soil type allows for it. Terracing is a well-proven technology not only in the Cordilleras but also in neighbouring countries like Indonesia. Such terracing cannot be done overnight. So the technology should focus on how to achieve terracing

with as many UDP farmers as possible within the remaining Programme period. Two options are likely to be effective.

One is by making terraces in one go in clayey soils through carabao ploughing along the lower part of an NVS or hedgerow, properly contoured. This should be done on all slopes above 50%. In the process soil will be moved from the higher part to the lower section until the terrace has emerged. The maximum width of the terrace should be no more than 2 meters.

The other option would be to achieve terracing gradually overtime, again only there where soil types allow for it, by putting up strong hedgerows or pole barriers locally called balabag, close together. Taking UDP's time constraint into account, in the latter case the proposal is to target on all slopes above 50% madre de cacao hedgerows at a distance of maximum 2 meters (along the slope). The hedgerows should be double rows with a distance of 50 centimetres apart and in between filled up with thrash of any durable kind. Due to rainfall effects and some ploughing terraces would then have emerged with the remaining Programme period.

Of course the adoption of both technologies would demand a huge effort from the farmer. In case of carabao ploughing, many farmers have no carabao or only one. It would involve a long time, long after UDP even, before 1 HA could be finished. In the case of hedgerows it would imply that the farmer has to put up may be 40 of them per HA with a length of 75 meter each, implying a total length of 3 km to establish.

Both options seem impossible to do properly when relying on individual farmers. However UDP is running out of time for sure, and we must by the end of the Programme, show enough farms in each barangay that have the right protection as well as crops.

One recommendation that emerged from the discussions with farmers, UBA members and extension staff is to use the system of bayanihan. In principle this would accelerate the putting in place of so many hedgerows on the individual farms to a great extent.

In case of option one, bench terracing, the recommendation was also to make use of bayanihan and mobilise as many carabaos that are available for hire in the brgy for that purpose.

Such bayanihan could be contracted out to the UBA and financed by UDP, barangay and municipal LGU. Strict supervision by technical experts would be necessary during the application of any of these technologies

Another option is of course to use bulldozers, pay loaders, to make terraces as is sometimes done in the Cordilleras. However if through bayanihan the works can be done, this would be preferred as it will strengthen the UBA and generate income in the local economy.

In case a farmer would be in a position to really go for tree farming and s/he would have no need to grow corn, then there is another technology that could be applied which is called zero-tilling in combination with "tudak". This technology means that the slope where the farm is located is covered with a permanent cover crop to prevent erosion and seedlings/seeds are planted in small holes dug into the cover crop. In respect of erosion control maintenance of the seedling or plant would be limited to ring weeding only.