

## THE VETIVER NETWORK – PHILIPPINES

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### The Beginning

In January 1990, the Farm and Resource Management Institute (FARMI) of the Visayas State College of Agriculture (ViSCA), Baybay, Leyte, Philippines, implemented a project entitled Upland Agriculture-Philippines. The project funding comes mainly from the International Development Research Centre (IDRC) of Canada. The main objective of the project was to test, adapt and promote technologies that would address the problem of soil erosion and soil nutrient depletion in the uplands, which are the most extensive and most threatened ecosystem in the Philippines. FARMI selected a pilot research site covering five upland villages in the municipality of Matalom, Leyte province. Two of the selected villages are characterized mainly by calcareous soils where corn is most widely grown. The other villages have strongly acidic, degraded and infertile soils where upland rice is the predominant crop.

A study of the farming systems in these villages revealed that farmers have developed their own technique to fight soil erosion. A considerable number of farmers practice *kahon-kahon* or natural grass strips to minimize soil erosion in sloping fields. However, the dominant grass species in the natural vegetative strips are not strong enough to hold the soil, especially during heavy rains. The project tried to improve the farmers' technology by searching for alternative grass species that are potentially superior to cogon (*Imperata cylindrica*) and other dominant native species in the grass strips.

A few months earlier, an interesting species was observed in another municipality. The grass was planted by farmers along the dikes of lowland rice fields for the purpose of stabilizing the dikes. The farmers called the grass *Mora* and after verification, it turned out that *Mora* is actually vetiver grass. Many farmers thought that *Mora* was not adaptable to the uplands. The first trial planting of *Mora* to test its adaptability to an acid infertile upland area of Matalom was done by the project in January 1990. A dry spell struck the area from February through May of the same year. When *Mora* survived this drought, its adaptability to the uplands and its tolerance to drought were confirmed.

The project invited 12 farmers from three villages to view a slide show on vetiver grass technology. The slide set was obtained by FARMI from The Vetiver Network (TVN). The farmers were also brought to the testing field to observe the grass. They signified their interest to try *Mora* as hedgerow species in their farms. The project provided some planting material to interested farmers in one *barangay*. In the other two *barangays*, the farmers secured the planting material by themselves from nearby lowland areas. In June 1991 the number of farmers who had tried planting *Mora* had increased to 17. The farmers were requested by the project to monitor and give their evaluation of the grass.

The first evaluation generated the following farmer feedback:

1. As hedgerows in the upland, *Mora* seems to be stronger than cogon because it is deep rooted.
2. *Mora* does not grow tall compared to leguminous shrubs and trees such as *Gliricidia sepium*, thus pruning is not needed.
3. Less water can pass through the *Mora* hedgerows during heavy rains.
4. *Mora* is better than cogon because its root growth is vertical while cogon has lateral roots which produce new shoots; hence more maintenance for cogon is needed.
5. Crops such as corn and upland rice planted near *Mora* hedgerows show better performance.
6. *Mora* has an expanded, dense base which can serve as a physical barrier preventing soil and water to pass through.
7. *Mora* is favoured over *Gliricidia* because the latter has laterally growing roots which interfere with land preparation.

8. *Mora* contributes much to the control of topsoil erosion. The transported soil is accumulated along *Mora* hedges, where it is trapped.
9. *Mora* can tolerate partial shading caused by the *Ipil Ipil* (*Leucaena leucocephala*).

Five years later, the project received the following farmers' comments:

1. *Mora* is easy to plant with minimal maintenance.
2. Herbage deposited along the upper portion of the hedgerows helps in trapping the soil during the rainy season. The herbage is also good mulch for sweet potatoes.
3. Contour plots have levelled three years after planting *Mora*.
4. *Mora* grows in any type of soil. *Mora* planted in Anapogon (calcareous soil) grows very well.
5. Once established, it is not easily killed by cogon grass unlike other contour hedgerow species.
6. It does not grow anywhere except in the contour line where it is planted.
7. *Mora* is not effective unless an A-frame is used in locating the contour line.
8. After four years of planting lines of *Mora*, the gullies are no longer visible.
9. *Mora* is a good wind break of upland rice and also serves as a nest for hens.
10. In just a few cropping seasons the effect of *Mora* in controlling soil erosion was evident. The soil trapped at the upper base of the *Mora* hedges was about 60-cm thick. Gullies were observed in the portion without *Mora*.
11. *Mora* survives long droughts. It grows again or produces roots at the nodes, making it effective as contour riser stabilizer.
12. Corn planted near the *Mora* produced bigger ears than those near the napier.

### **The Establishment of the Philippine Vetiver Network**

The farmers' positive feedback on vetiver grass inspired the project staff to make VGT a very important component of the FARMI Sustainable Upland Farming Program. With TVN financial support, an easy-to-follow technology guide on VGT based on farmers' experiences was published in English and in two local dialects. The technology guide was used as the basic VGT instructional material for the institute's soil and water conservation and agroforestry projects. Perhaps TVN recognized this effort, for a few months later Richard Grimshaw invited the author to establish a vetiver network for the Philippines.

The Vetiver Network – Philippines (VETINETPHIL) was officially established on 5 August 1997 during the first vetiver conference-workshop held at ViSCA, Baybay, Leyte. The network has more than 500 members at present and continues to attract students, researchers, farmers, extension workers, private and governmental organizations and other people who have interest in VGT.

#### **The VETINETPHIL Vision**

Soil erosion controlled, lands rehabilitated and embankments stabilized in the Philippines through VGT.

#### **The VETINETPHIL Goal**

To promote the adoption of vetiver grass technology in the Philippines.

#### **The VETINETPHIL Objectives**

- To lead in the promotion of VGT in the Philippines.
- To coordinate the VGT research, promotion and application projects of network members.
- To assist in the establishment of members' vetiver production farms and nurseries and in marketing planting materials.
- To support the implementation of environmental programs of the governmental and non-governmental organizations.

## **The VETINETPHIL Strategy and Accomplishment**

### **The Vetiver Network Membership**

The Vetiver Network (TVN) provided the list of its members in the Philippines. Using the list, people were invited to attend the first vetiver national conference. Aside from the list, people who were known to have already engaged in vetiver works were also invited to the VETINETPHIL launching conference. The network now has more than 500 members who are directly or indirectly engaged in vetiver-related activities.

### **Area Coordinators**

To facilitate the implementation and monitoring of VETINETPHIL activities, area coordinators for the country's three main groups of islands were designated. The network has designated Ms Noah Manarang of Vetiver Farms, Inc. to coordinate network activities for Luzon, Mr Andy Obusa of FARMI for the Visayas and Mr Jun Talpis of CARE-Philippines for Mindanao. Recently, Mr Tanny Mobe was designated coordinator for the Central Visayas, due to the increased vetiver activities in the area. The area coordinators serve as the direct contact persons in their areas and assist the national coordinator in carrying out the activities and projects of the network.

### **Technology Demonstration**

As part of its extension strategy, VETINETPHIL has set up three VGT "techno-demo" and training centres. For agriculture, they are located in Inopacan, ViSCA campus and Matalom. The centres cater to farmer-to-farmer training on soil and water conservation and agroforestry. The Department of Agriculture also manage "techno-demo" farms in Kananga and Tacloban, both in Leyte province. A dozen farms in Western Leyte also serve as demonstration farms and are usual destinations of cross-site visits by farmers, extension workers and researchers from other areas. For infrastructure, the Department of Public Works and Highways has a demonstration project in Aklan province (in collaboration with Vetiver Farms, Inc.), Infanta, Quezon, and Baybay, Leyte. Cebu Uniting for Sustainable Water (an NGO) also has vetiver-coco erosion net demonstration at the Cebu-Balamban Highway.

### **Training and Cross-Site Visits**

In collaboration with FARMI and other organizations, VETINETPHIL offers farmer-to-farmer training on soil and water conservation and agroforestry. The network has conducted a total of seven trainings (72 farmers) and cross-site visits of six groups of farmers and agricultural technicians from the Visayas and Mindanao. Planting material was distributed in both activities.

### **Extension Materials**

The network produces and distributes countrywide the vetiver technology guide in English and local dialects, the *Vetiveria* newsletter, inserted into the PRVN *Vetiverim* newsletter, the "Save our soil: use vetiver" poster, and *Vetiver grass technology in the Philippines*, a colored booklet. It also produces posters for presentation in conferences and symposiums, stickers and some advertisement and articles in printed media in the Philippines. It also modified the vetiver slide story now with audio tape. VETINETPHIL members also produced a video on *Vetiver nursery establishment* by Noah Manarang of Vetiver Farms, Inc, and vetiver brochures and leaflets by the Environmental Research and Development Bureau of the Cordillera Autonomous Region, Baguio City. The network has also produced and aired VGT technology tips on DYAC radio at ViSCA.

## **Conferences, Workshops and Technical Assistance**

The network has sponsored three national conferences and workshops and conducted a dozen local meetings. It has also presented papers and posters in international, national and local symposiums. As part of VGT promotional strategy, the network offered free technical assistance to various governmental and non-governmental projects (agriculture, agroforestry, infrastructure, etc) in different parts of the country. As a result, VGT has been integrated in various government programs like the Hilly Land Research and Development Program of the Agriculture and Fishery Modernization Act (AFMA) and in various NGOs' upland development projects. The network also took part in the offering of a vetiver short course during the bioengineering conference in Manila in April 1999.

## **Production Farms and Nurseries**

The network's VGT promotional effort has resulted in increased demand of planting material, either bagged or fresh tillers. VETINETPHIL encourages members to produce vetiver planting material for big-time users. Now it has more than 30 farmers engaged in the production of planting material for the market. Most of these farmers maintain farms with vetiver hedgerows. The provincial agricultural office in Leyte has ordered all its municipal agriculturists to establish vetiver propagation plots. The network has maintained its own production farm and nursery to supply free planting material to farmers, friends, NGOs, people's organizations, government projects, and members who want to use VGT or start a production project. The network's nursery also serves as the farmer members' collection area of tillers for the market.

There are member NGOs which have commercialized the production and marketing of vetiver planting material. Examples of these are, among many others, the Green Gold in Ozamiz, Mindanao, PEOPLE in Ormoc, MAFUD in Leyte and CUSW in Cebu. But the biggest suppliers of planting material are the private farms/firms which are capable of producing millions of plants in one production cycle. The number-one producer of vetiver planting materials in the Philippines today is Vetiver Farms, Inc, which was set up entirely on a commercial basis to supply planting material and promote VGT throughout the country. Another future big supplier is the FF Cruz Corporation in Central Luzon, which has set up a 10-hectare production farm in Nueva Ecija. The firm propagates vetiver for its Ambuklao dam and coastal road projects and for other users.

## **Linkages**

The following are the links established by VETINETPHIL with different agencies, organizations and projects/programs in the Philippines. Agency projects include planting material production and marketing, promotion, publication, research and application of VGT.

### ***Government agencies***

1. Department of Public Works and Highways (DPWH) – VGT application and demonstration
2. Department of Agriculture (DA) – nurseries/production plots and training
3. Philippine Coconut Authority (PCA) – application in selected sites
4. Local Government Units (LGU) – pilot sites and farmer-to-farmer SWC training
5. Department of Environment and Natural Resources (DENR) – research and VGT application
6. Central Luzon State University (CLSU) – research, application and demonstration
7. Visayas State College of Agriculture (ViSCA)– research, training and extension
8. Department of Tourism (DOT) – VGT application in hilly eco-park
9. Department of Agrarian Reform (DAR) – application in ARC SWC projects
10. National Irrigation Administration – application and demonstration

### ***Government special/bilateral projects***

1. Presidential Commission for Tagaytay-Taal – promotion of VGT

2. National Integrated Protected Areas Program (NIPAP) – application and promotion
3. Western Samar Agricultural Resource Development Program (WESAMAR) – application in upland development projects
4. Small Islands Agricultural Support Service Program (SMISLE) – application in upland farms and irrigation projects

***Philippine-based international project/organizations***

1. International Institute for Rural Reconstruction (IIRR) – training and publication
2. Forage for Small Holders Project (CIAT-FSP) – application in hilly forage production farms
3. ICRAF-Mindanao – research on vetiver and other grasses
4. SEAMEO Regional Centre for Graduate Study and Research in Agriculture (SEARCA) – research and application in project sites in Mindanao
5. Fallow Management-Philippines – member agencies engaged in soil research and management
6. Conservation Farming in the Tropical Uplands (CFTU) – research and extension (20 member agencies in the Philippines)
7. CARE-Philippines – application of VGT
8. DOLE Philippines – application in banana and pineapple plantation

***Private firms/corporations***

1. First Worldwide Marketing Corporation – application of VGT in a golf course
2. FF Cruz Corporation – production and application
3. Jubokee Enterprises – demonstration, research and production
4. Woodland Development Corporation – application
5. ST Hidalgo Construction – VGT highway application
6. MRC ALLIED Industries Inc – application in EPZA sites and publication

***Non-governmental organizations***

1. Mag-uugmad Foundation Inc (MFI) – VGT application, promotion and planting material production
2. Ramon Aboitiz Foundation, Inc (RAFI) – VGT application and publication
3. PEOPLE Foundation Inc – VGT planting materials production
4. PHILDRAA-Philippines – VGT application and collaborator of SWC-vetiver training
5. WELFARE-Leyte – VGT application and promotion in upland development projects
6. AWESOME-Mindanao – VGT application, promotion and publication
7. Soil and Water Foundation Inc – VGT application, promotion and publication
8. Cebu Uniting for Sustainable Water (CUSW) – promotion, publication and planting materials production

**Vetiver Research**

Aside from studies conducted by the network members, VETINETPHIL has also supported some studies conducted by university students. Some of the completed studies include:

- Communication environment and information gaps on vetiver grass technology among upland farmers in Bilar, Bohol.
- The physico-chemical properties of the rhizosphere soil of vetiver grass growing in degraded uplands.
- Effects of nitrogen fertilizer application on the growth of vetiver grass planted in three soil types.

## **Elements for the Fast Adoption of VGT**

### **Multimedia Promotion and Extension System**

The network used various extension methods from conventional training and visits to high technology using the Internet, videos and CDs.

### **Active Area Coordinators**

The coordinators contributed much in running the network particularly in promoting vetiver grass technology.

### **Commercialization of Vetiver**

The commercialization of vetiver grass has helped create awareness and interest among the large VGT users.

### **Participation of the Private Sector**

The private sector has played an important role in the promotion and marketing of VGT and in the production of planting material.

### **Financial Support**

The availability of funds was very crucial in running the network particularly at the earlier stage of the project. Member organizations have recently started supporting some of the activities of the network.

### **Communication Facilities**

The communication facilities and computer system provided by TVN were indispensable in the day-to-day operation of the network.

## **Main Problem**

The most important problem encountered has been the failure of the coordinator to visit most members' projects/activities due to time constraints and the distance or location of members. Very few members have access to the Internet, so communication is still done by conventional means. The majority of members do not reply to letters and network requests.

## **Conclusion**

The conservation and protection of our soil and water resources are crucial to sustainable agricultural production and the enhancement of environmental quality. The unmitigated soil erosion brought about by agricultural activities, road construction, mining and water resources development among others necessitates immediate remedial action. Carrying out this urgent task requires the adoption of VGT on a national scale. The birth of the Vetiver Network-Philippines was very significant in the promotion of the technology in the Philippines.

The spread of VGT in the Philippines in the past two years has been considered fast by many people. Various factors have contributed to this success, one of which is the participation of the private sector. VETINETPHIL and its partner organizations will continue their aggressive promotion of VGT and will exert all efforts to assure massive adoption of the technology in coming years.