

## Editorial

### Princess' Patronage

*"We have learnt with great joy the acceptance by HRH Princess Maha Chakri Sirindhorn of Thailand to be the Patron of The Vetiver Network. This is a great honor for us in the developing countries. We also congratulate TVN Board of Directors for its great wisdom in inviting HRH to this important post.*

*We also thank His Majesty the King of Thailand for His keen interest and support for this technology throughout the world. We trust that through the devout patronage of HRH the much needed impetus to the VGT throughout the Third World will be achieved."*

The above e-mail message, sent by Anthony Makoye, Coordinator of the Tanzania Vetiver Network, to various people in the vetiver circle round the world, is one of the many 'congratulations' expressed upon hearing the great news that Her Royal Highness Princess Maha Chakri Sirindhorn has graciously accepted the invitation to be the patron of TVN, which also includes all the vetiver networks under its umbrella.

It is no doubt a great wisdom of TVN to invite HRH to be our patron. HRH Princess Maha Chakri Sirindhorn has been well known among us, the vetiver workers, especially those who participated in the last two international conferences on vetiver held in Thailand in 1996 and 2000. Not only graciously chaired the opening ceremony, HRH actually participated in the Conferences, e.g. by attending a number of sessions, opening and making thorough visits through the poster presentations and exhibits, and attending the farewell dinners, etc. Although not joining the group during the study tours, HRH went privately ahead of us to all sites. In addition, She has been instrumental in convincing the Chinese authority to accept being the host of ICV-3 in 2004.

*A most dedicated person who closely follows Her Father's footsteps in almost everything, including the devotion to the vetiver works, HRH is truly a great asset to the world's vetiver networks, and hopefully, "the much needed impetus to the VGT throughout the Third World" will be achieved.*

## TVN Under HRH Princess Maha Chakri Sirindhorn's Patronage

The following message has been sent by Mr. Richard Grimshaw, Coordinator of the Vetiver Network (TVN) to coordinators of the regional and national vetiver networks throughout the world: *"I learned today that Her Royal Highness Princess Maha Chakri Sirindhorn of Thailand has, as of 6 July 2000, graciously accepted the invitation of The Vetiver Network's Board of Directors to be the Vetiver Network's Patron. This is indeed a great honor for us. The acceptance of HRH as Patron recognizes His Majesty the King of Thailand's great interest and support in the Vetiver Grass System, and HRH's own interest and support for this important technology.*

*HRH's official involvement with the worldwide vetiver initiative should be of great benefit to regional and national vetiver networks. Since your networks are affiliated to TVN, she will be your Patron too. I know that you will use her patronage respectfully and wisely – she and her support may be of great help in drawing attention to country leaders and policy makers of the problems relating to the lack of effective soil and water conservation measures, and the importance of vetiver in mitigating many of these problems in an efficient and low cost manner, and the need for funding."*

TVN has also made the following official announcement about this most exciting news.

*"It is with great pleasure that the Board of The Vetiver Network announces that Her Royal Highness Princess Maha Chakri Sirindhorn of Thailand has accepted our invitation to become the Patron of TVN. This is a great honor for us and all vetiver users and supporters around the world. Not only does HRH have a great interest and hands on experience of the Vetiver Grass System, but she also represents a family that has done much to bring focus to environmental improvement to Thailand, and through specially focussed projects have done much to reduce rural poverty in the whole Kingdom of Thailand. We are sure that with her support the vetiver initiative will go forward at an accelerated rate."*

## New Funding for TVN

During the past few months TVN has been fortunate in receiving some renewed funding from two of our key donors. The Wallace Genetic Foundation has provided \$76,000 of which \$61,000 will be spent for some special research, under the responsibility of Paul Truong of Queensland, relating to vetiver and water. These funds will be matched by the Government of the State of Queensland, Australia and the University of Queensland. The balance \$15,000 will

be for research on the cold tolerant “*jiji*” grass in China, under the responsibility of Liyu Xu, Coordinator of the China Vetiver Network.

The Royal Danish Government has made a grant of Kroner 900,000 (approx. \$114,000) to TVN to support the component in “Vetiver 2000” ([http://www.vetiver.org/TVN\\_2000.htm](http://www.vetiver.org/TVN_2000.htm)) that relates to dissemination of technical information. These funds will be used to maintain TVN’s newsletters, home page, reprinting of technical handbooks, production of CD-ROMs, etc. Some of the funds will be granted by TVN to national and regional networks to help them produce technical data specifically for their areas of operation.

### **New Vetiver Publication and CD-ROMs**

The Vetiver Network (TVN) is preparing a new publication and two CD-ROMs on vetiver for distribution. A new book on Vetiver Grass Systems written by John Greenfield is almost ready for publication. Paul Truong has taken responsibility for producing two new CD-ROMs – one reproduces P.K.Yoons five-part report, “A Look See At Vetiver”, and Power Point Presentations by TVN as well as the presentations made at the recent ICV-2. These are fully illustrated with excellent colored photographs. They are a veritable compendium of technical information on vetiver, its science, propagation and application. The other CD-ROM brings together a number of separate CDs by Paul Truong on vetiver and its applications. Negotiation has been made for the Royal Development Projects Board of Thailand to reproduce both CD-ROMs using the fund provided by the Heineken Breweries Co., for free distribution to PRVN members. It is hoped that all these materials would be available for the trainees of the International Training Course on Vetiver Grass System to be conducted in the latter part of November 2000 (see details in p. 5 of this issue).

### **Sewage Buffer Makes a Top Perfume\***

A tropical grass being used by Queensland Department of Natural Resources (DNR) scientists to absorb runoff from effluent, landfills and acid sulfate soils deposits, is also the source of perfume for top fashion models. Departmental Soil Conservationist, Dr. Paul Truong, said that in all his years of research, he had never seen anything like vetiver grass, a native of India. “There is often a natural remedy for man-made problems and we have discovered this to be one of them”, Dr. Truong said.

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\* Reprinted from Queensland Department of Natural Resource Media Release.

Vetiver has been researched as a buffer against soil erosion on steep slopes, with infrastructure like bridges and roads, but now is proving its worth in the Brisbane valley to prevent nutrient runoff into local waterways. “This collaborative project with DNR and University of Southern Queensland is experimenting with vetiver to reduce volume and nutrient load in effluent that might otherwise leach into Lake Somerset, the source of Brisbane’s water supply.”

“Vetiver’s massive root system is removing nitrogen and phosphorus from secondary treated effluent at a church youth camp 200 m from the lake.” DNR Principal Scientist, Resource Management, Dr. Phil Moody, said the vetiver treatment of effluent runoff increases options for sustainable effluent management. He said: “The vetiver hedges on paddock boundaries may be a substitute for riparian buffer zones which are often absent between disturbed land and watercourses.” “The multiple uses of vetiver contribute to the DNR vision of maintenance and enhancement of the economic, ecological and community values of the land resource”, Dr. Moody said. With the same vetiver grass technology Natural Resources solved a landfill seepage problem for Redlands Shire Council on Brisbane’s outskirts.

Leachate from a landfill near Judy Holt Park at Wellington Point was polluting a nearby watercourse until DNR conservationists installed a barrier of vetiver grass. Today the area is back to its natural state with no sign of toxic leaching.

So versatile is the grass that world-class perfume house Guerlain is making perfume from its roots. Dr. Truong said he bought a bottle of vetiver perfume, after learning that it was preferred by model Elle McPherson, among others. “I can work all day in the field, and even around effluent runoff, and my vetiver doesn’t let me down. I have the men’s vetiver of course,” said Dr. Truong.

### **Where Vetiver Cannot Grow\***

Vetiver was tolerant to drought, flood, a wide range of heavy metals, and many other environmental stresses. The major limitation to its growth is probably low temperature. So far, it was recorded that it survived and grew well after a winter with the freezing temperature of -15.9°C in 1991 in Jiangxi Province of China. In 1998, vetiver was introduced to Tianjing (near Beijing) and planted on coastal soil near the sea. As expected, it did not grow well. But which

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\* *By Liyu Xu, Coordinator, China Vetiver Network, Nanjing, China.*

factor influenced the grass most was not clear, whether it was a low temperature or a high content of salt.

Last year, vetiver grass was introduced to Luliang Prefecture of Shanxi Province on the Loess Plateau to see if it could grow along the Yellow River Basin. On 25 May 1999, 10,000 tillers were transported to Liulin County from Fujian Province. The soil contains carbonate and was derived from loess. It was very dry; the soil of top 40 cm layer was almost completely dry. The grass was planted on both the slope and the terrace, with a spacing of 10 x 10 cm. Small holes were dug for watering on 12 June and 20 July of the same year. At the end of June, the grass on the slope did not survive, while some on the terrace had a survival rate of 40%. The grass was 32-60 cm high at the end of August with a maximum of 12 tillers per clump.

Before winter the grass was irrigated again and buried with soil. When investigated in March 2000, the grass was not growing and the roots died. It was considered that the death of the grass was mainly caused by low temperature. The lowest temperature was  $-20.8^{\circ}\text{C}$  last winter, with 46 cm frozen topsoil layer. There were 12 days when the temperature ranged from  $-17$  to  $-20^{\circ}\text{C}$ . Another reason was drought. Moisture was lost during the 5-day transportation in May. The grass was put inside the bags which were ventilated. The temperature was over  $30^{\circ}\text{C}$ , which aggravated the moisture loss. Some grasses might get dry upon arrival and the attached soil was separated from the roots.

To sum up, vetiver cannot be planted at a place where soil is frozen for a certain period, although it could tolerate at  $-15.9^{\circ}\text{C}$ . What we recommended was that the grass could be planted in the Yangtze River Basin and south of it. In this region the grass survives and can grow well and brings its function into full play.

### **Vetiver Status in Brunei\***

Brunei has been experiencing some severe erosion problems, particularly in the coastal region. This is due to three main factors:

- the rapid pace of development of infrastructure, particularly roads, over the last few years
- the predominance of sandy soils which are very susceptible to erosion
- the lack of an environmental impact assessment process which results in few measures to minimize erosion caused by development projects.

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\* *By Jon Davies, Country Representative, Vetiverim; Biology Department, University Brunei Darussalam, Brunei*

Being involved in wetland conservation, I was concerned about erosion in catchments degrading wetland areas and became interested in natural methods of erosion control. I first read about vetiver in the World Bank publication and became interested in seeing first hand whether its promise could be fulfilled. In 1996, I imported some tillers of an acid tolerant vetiver grass from Malaysia, courtesy of Diti Hengchaovanitch who very kindly provided them free-of-charge. The tillers were grown in polybags and a substantial stock built up fairly rapidly from division of the tillers. Individual plants for planting out were grown on in 20 cm-diameter polybags in good quality topsoil.

To see what vetiver was capable of, I gave the plants a “baptism of fire”! Around the university there are severely degraded areas of white sand podsols, formed from old beach terraces which once held tropical heath forest (*kerangas*). These soils have been very strongly leached and so are virtually devoid of nutrients and are very acidic (pH 3 to 4). The plants were planted out in a row in a gully of loose white sand which receives very strong pulses of water from the slope above after heavy rain. Thus, the environment for the plants would be extremely rigorous – very low nutrient concentrations, high acidity and alternate water logging and drought periods.

The plants have been growing for 3-4 years now and the results are quite impressive to me. Water flow through the gully has been retarded, resulting in sedimentation upstream of the vetiver hedgerow. The decrease in water flow after rain has meant that other vegetation has become established immediately upstream of the vetiver hedgerow, resulting in greatly reduced sedimentation downstream. As of the time of writing, the gully has become stabilized. There is one qualification to the success. The plants had to be given a lot of attention in the early stages of their establishment. They were given lime in the first couple of months and have had numerous foliar feeds. Moreover, each plant had a well-developed root system which filled most of the polybag when it was planted out.

This rough trial (which was not really scientifically rigorous!) indicated that vetiver could be a useful tool in erosion control in very poor soils in Brunei. Sadly, though, this is about as far as it has got. The Public Works Department in Brunei expressed interest and Diti came over to give a presentation on his experience with vetiver grass. Several private engineering companies and nurseries have also expressed interest and have taken some vetiver plants for their use. Despite this interest, not much has been done in integrating vetiver grass into projects. The major reasons for this were the serious internal economic problems experienced in Brunei from

1997 onward. Government departments had their budgets slashed, while private companies had to shed many of their staff. But with the increase in the price of oil, hopefully budgets can be restored and vetiver grass can become a widely accepted tool for the control of erosion in Brunei.

I will be leaving Brunei in August and I hope that someone else will encourage the further use of vetiver grass in Brunei. Great thanks are due to Diti Hengchaovanitch and Paul Truong.

### **The International Training Course on Vetiver Systems**

The Heineken Breweries Co. Ltd. Had donated \$50,000 to the Office of the Royal Development Projects Board (ORDPB) to promote the use of vetiver grass. Heineken has its green label image and is dependent upon sources of clean water for its products. So the company is interested in environmentally beneficial technologies, especially those that involve the conservation of clean water. The Vetiver Committee of ORDPB has decided to use this Heineken Fund for two main activities, (i) training for both Thai and international participants, and (ii) dissemination of technology through publications, CD-ROMs, videos, etc. The main objective of the course is that after the training, the trainees will become familiar with the technology, appreciate what is being done in research, experimentation and application, and have concepts on how to promote the technology in their own environment.

The course will include lectures, laboratories, field works, and study tours on all aspects of vetiver use. Introductory part of the lecture will cover the importance of the vetiver while the main feature will include propagation techniques and nursery management, the use of vetiver grass in various systems of both agricultural and non-agricultural activities, and the utilization of the leaves and other parts. The practical, hands-on training will provide a good opportunity for the trainees to learn all the techniques of propagation and planting out in the fields for different purposes. The study tour would add to the trainees' experience through the concept of 'seeing is believing' at the various project sites where vetiver has been successfully established.

Trainees will be asked before the training begins that they have to do preparatory work related to an action plan they anticipate undertaking, or to outline issues they want to have resolved, or that they conduct a survey of what is being done in their region/country with vetiver, what were the successes or failures, or something of that kind.

To provide maximum benefit to the trainees upon their return to their home countries, lectures, laboratories, on-the-job training and study tours will be continually summarized with

evening round table discussions, paper preparations and participation by the trainees, so that towards the end of the training course, each of them will be able to prepare an individualized report, either as a work plan, research project, promotional activity plan, or policy formulation, which will reflect what the trainee has proposed to do prior to attending the course. All reports will be compiled and presented to the sponsor as well as the immediate supervisors of the trainees.

The Training Course will take place during 19-30 November 2000. This 12-day duration is divided into five activities, namely: (i) 2 days for international travelling to and from Bangkok (all trainees are expected to arrive in Bangkok on Sunday 19, November and depart from Bangkok on Thursday, 30 November 2000); (ii) 2 days for course work at the Office of the Royal Development Projects Board (ORDPB) in Bangkok; (iii) 3 days for laboratories, on-the-job training and study tours (at the Queen Sirikit Botanic Garden in Chiang Mai, the Doi Tung Development Project in Chiang Rai, and the Land Development Research Center in Chiang Rai); (iv) 3 days for study tour to successful project sites, e.g. at Huai Sai, Nong Phlap, Khao Cha-ngum; and (v) 2 days for travelling within Thailand, including stopovers, to see vetiver activities along the way.

Intended trainees should have the following qualifications:

- Presently working as an agricultural officer, extension worker or engineer involving in activities in which growing vetiver is an active part of his/her routine work.
- Holds a bachelor degree or higher, with at least three years of experience in the field.
- Excellent physical condition.
- Proficient in English

Two types of fellowships (to be named the "Heineken Vetiver Training Fellowships") are offered, viz.:

- *Full fellowships*: A total of 10 persons (two from each of the following countries: Cambodia, Indonesia, Lao PDR, Myanmar, and Vietnam) will be granted full fellowships, which include airfares from their cities of residence to Bangkok and return, food and accommodation, training expenses, travelling in Thailand, and a pocket money. Such fellowships will not cover expenses within their own countries (e.g. expenses in obtaining travel documents, taxi, tips, etc.), airport taxes, personal expenses, and medical insurance.
- *Partial fellowships*: Trainees from other countries will be granted partial fellowships if they can pay their own airfare to and from Bangkok. Otherwise, they will receive the same



treatment as those receiving full fellowships. This category *also* includes: (i) Regional and National Vetiver Network Coordinators who may want to 'brush up' their knowledge about vetiver from this course; and (ii) trainees from the host country, Thailand, who are expected to help taking care of the foreign trainees during that period. A total of 20 partial fellowships will be granted. In case more than 20 candidates apply for partial fellowship, priority will be given to the Coordinators and those who are presently responsible for vetiver projects in their countries.

**Eligibility:** Every candidate who wants to apply for fellowship (full or partial) must submit a Project Proposal which is a one-page document on: (i) What the candidate wants to get out of the course?, or (ii) What the candidate intends to do with the training once he/she returns? This will be used as the basis for the trainee's report at the end of the course. The candidate should fill-in the Application Form, available by request from ORDPB by fax (66-2-280-6206) or e-mail ([pasiri@mail.rdpb.go.th](mailto:pasiri@mail.rdpb.go.th)) and submit it to the ORDPB by 1 October 2000 by e-mail attachment, fax, or post. Applicants will be notified on the decision by 15 October 2000.

#### **Report of the Thai National Seminar on Vetiver Research**

The Office of the Royal Development Projects Board organized the Thai National Seminar on Vetiver Research on 24-25 August 2000 at Kasetsart University in Bangkok. The main objectives of this seminar were to brainstorm the ideas of planning future research projects which would lead to practical application of the knowledge gained in such a way that it is adopted by the farmers and other vetiver users; and also to prepare for the Third International Conference on Vetiver.

The program included a brief statement related to His Majesty's Initiatives on Vetiver, a keynote address on "Vetiver: The Global Perspectives" by Dr. Narong Chomchalow; presentation of summaries of the research results in: (i) basic research, (ii) agricultural applications, (iii) non-agricultural applications, (iv) utilization, (v) impact on the environment, (vi) dissemination of technology; workshops on the aforementioned topics; and presentation of agreed research topics.

The 100 participants were those invited from government agencies and private sector. It is interesting to note that future researches on vetiver in Thailand will be users' oriented, while cost-benefit issue will be given high priority in all projects to be undertaken by government

agencies. Report of the Seminar will be published by the Organizer, a summary of which will appear in Vetiverim-15.

### **Vetiver Development in China in 2000\***

I just finished a field trip in Fujian Province, from Pingtan Island in the south to Wuyi in the north and got a lot of fantastic stories about vetiver. The trip covered several counties/cities, such as Pingtan, Fuzhou, Shanming, Nanping, Fuqin, Youxi, Qingliu, etc. Hear they are:

#### **1. Vetiver and a County Town**

Without a look with your own eyes you might not imagine the relationship between vetiver and a town. However, when you see such thing *in situ* you would not be surprised. Qingliu County is located in the western part of Fujian Province, and it is a mountainous area with its county town along a river where tens of thousand people live. Opposite the river there is a mountain. A highway was constructed between the mountain and the river. In 1997, there was a sign that almost half the mountain was to slide over the highway and the river and possibly hit the town. So thousands of people were evacuated to safe places. Then, almost half the mountain did slide over the highway and the river. Fortunately, no one was hurt and not one building was destroyed. After hundreds of thousands cubic meters of earth and rocks were removed, a hot discussion was organized, i.e. how to protect the huge cuts which covered an area of approx. 20,000 m<sup>2</sup>. Traditionally, the cuts should be protected by concrete to stabilize the slope and prevent further slide, which would not only cost a lot but would also create environmental problem. The people in the county did not want to see a huge concrete wall, which "would look like a tomb", they said, as they open their doors. According to the Provincial Highway Bureau's suggestion, they decided to use vetiver to protect the cuts in addition to limited concrete walls at the most critical sections. The rehabilitation was done in March and April 1999.

In the rehabilitation of scars, vetiver grass was planted on two contour rows as a group, spacing 20 cm within a row and 25 cm between rows, and 75 cm between two groups. Investigation revealed that the survival rate reached 95%. The roots developed very well and it was impossible to pull a single clump out just only one month after planting. A dense living fence was formed after 3-4 months. As the huge cut consisted of moderately weathered parent

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\* By Liyu Xu, Coordinator, China Vetiver Network, Nanjing, China

material containing very little soil, the grass did not grow as good as in other locations. However, it did provide a good protection function. The whole cost for vetiver planting was only 45,000 Yuan RMB (about US\$ 5,487), plus the cost of plant materials (0.1 Yuan/tiller). This cost was only 50% of the expenses of other kinds of grass were used. The only technique they employed was dipping the grass roots with clay paste before planting, then bury the roots with 6-8 cm thick extra soil above the original surface, and give sufficient water.

## **2. Vetiver for Highway Protection in Northern Fujian Province**

Few persons may have visited the demonstrations on vetiver for highway protection during International Workshop on Vetiver in 1997 and Vetiver Bio-Engineering Technology for Erosion and Sediment Control and Civil Construction Stabilization in 1999. After that, a great progress was made by an NGO and some highway institutions. At the most critical section of the National Highway No. 205, vetiver was planted on the fills on 1-5 April 2000 (during rainy season), spaced at 20-25 cm within row, and 150 cm between rows. An NGO, North Fujian Agricultural High-Technology Institution, contracted the project with the Highway Bureau, and guaranteed that the slope with 3,000 m<sup>2</sup> area should be protected and covered with vegetation within six months. However, the slope was already completely covered by the grass in only 100 days when we visited the site. The grass not only stabilized the highway embankment but also protected the state-owned barns just down the slope. To provide vegetation cover, another kind of grass was interplanted. In Meixian Township of Youxi County, the whole slope of the newly constructed Long Kou highway, with an area of over 8,000 m<sup>2</sup>, was protected by vetiver by the County Communication Bureau in October 1999. When we visited in July 2000, the grass was around 140 cm high and with 10-15 tillers/per clump. The highway was stabilized and the rice field down the road was also protected. The highway bureaus have high enthusiasm in using vetiver because it was a cheap and easy way. Before the application of vetiver grass, there was a lot of conflicts between the highway bureaus and the farmers. The latter often went to the former asking for compensation when their rice field was buried by the eroded sediment from highway embankments.

On National Highway No. 316, vetiver grass was planted along milestone '109K+3' to protect the fills, in addition to various demonstration established in the past few years. The grass was planted on 15-17 April 2000. Now, it is over 100 cm high with 30-40 tillers/clump. The slope is firmly stabilized.

Besides, the grass was also planted on a river bank in Jianyang County in February 2000. It is now 70-80 cm high, but some of them were washed away by the recent flood. Replanting will be made in September this year.

*(To be continued)*

### **Report of the RDPB Mission in Madagascar\***

Madagascar, a country physically not in the Pacific Rim, is located on the fourth largest island in the world that lies some 400 km off the African East Coast. Ethnically and linguistically, however, it bears closer affinity to Southeast Asia, since the main group of the Malagasi, as the people of Madagascar is known, was thought by anthropologist to migrate from this region some 1,200 years ago.

Criss Juliard, of the Madagascar Vetiver Network, first mooted of the idea, which later culminated in the protocol agreement between the Landscape Development Interventions (LDI) Program, a USAID-funded project and the Office of the Royal Development Projects Board (ORDPB), Thailand. It involves the volunteer service of two specialists from Thailand, Mr. Diti Hengchaovanitch, a civil engineer and Dr. Uthai Charanasri, an agronomist. They went on this mission to advise on ways and means to rehabilitate the severely damaged railway caused by two adverse cyclones in February and March this year to the Fianarantsao to East Coast (FCE) Railway. The damage to the 163 km track included 280 landslides and washouts, and the services had to stop for two months --- a severe blow to the livelihood of the people and the economy along the rail corridor. Although temporary repairs have now been made and the railway resumed operations since 1 June, there still remain some 15 critical locations where major remedial and strengthening works need to be addressed as a matter of priority.

While in Madagascar, their activities covered visit to the FCE railway line to examine the causes and extent of damages and to make relevant recommendations. Presentations on vetiver system were made to relevant high-level government officials and to prospective users. They were also interviewed by the press on their mission.

Drawing on their vast experiences in landslide remedial works and hill slope development projects for the hill tribes in northern Thailand, the two experts were of the opinion that the central cause of the landslide and damages were the adverse effect of the rainfall wrought by the cyclones, the lack of protective mechanism to cope with the exceptional rainfall

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\* *By Diti Hengchaovanitch, APT Consultant, Bangkok, Thailand*

event, the population and economic pressures that led to ongoing slash-and-burn agricultural practice on the hill slopes flanking the railway tracks, thus precipitating in erosion and instability problems.

Since the damages were brought on through the agency of rainfall and/or water, recommendations were given on measures to divert/mitigate urgently, in the first instance, potential harmful water forces. Thereafter, the affected slopes would be treated and strengthened through vetiver grass planting coupled with some other appropriate engineering solutions. Proper vetiver planting techniques were demonstrated in the field.

The preparation for the large quantity of vetiver planting materials that would be employed and the organization of relevant nurseries were advised. Particular attention was given to participation of the local farming folks in the planting of vetiver for sale to LDI/FCE, in order to generate income as well as to protect their own lands in the process. Suggestions were also provided on alternative types of crops that would generate better incomes while simultaneously controlling erosion from the uplands.

In summary, the mission can be considered a great success. M. Jean-Robert Estim Director of LDI called it an example of 'South-South' cooperation. Dr. Mark S. Freudenberger, Regional Director of LDI Fianarantsoa concluded that they had profited a lot from the skills and insights of these two specialists. LDI and FCE staff also derived tremendous amount of knowledge and enthusiasm through interactive discussions.

## **Letters to the Editor**

### ***Bring Back the Snakes***

Reference is made to the article "Rats in the Vetiver Hedges in China" in *Vetiverim-13*, it is my experience that rats in vetiver occur only in areas where rats have pre-existed, i.e. in paddy bunds, levees, and other earthen banks. This is confirmed by Alemu Mekonnen who wrote to me about this year's drought in Ethiopia. He says that where vetiver had been planted on old contour banks, rats have destroyed the vetiver (because they have nothing else to eat!), but where vetiver was planted on flat land where rats did not pre-exist, rats have not taken up residence. I have seen this situation elsewhere in India. Even if there are rats in vetiver stabilized levees at least the possibility of "piping" should be reduced, since vetiver roots will bind the levee wall together and should prevent "pipe" enlargement. A good area for investigation! Bring back the snakes!

Dick Grimshaw

### ***Cicadas Inhabiting Vetiver Hedges***

I note the subject of rats inhabiting vetiver hedges and I wonder if my observations in New Zealand might be useful. Here I have found that very large numbers of cicadas are living in the soil around vetiver plants in my nursery with up to 290 insect burrows (tunnels) per square meter being recorded. This is a very high biomass and may only occur in this location. The increase in density of burrows close to each plant studied indicates that the cicada nymphs are actually targeting the vetiver roots and obtaining nutrition from them. Is it possible that a similar situation exists in tropical locations and that there the cicadas are a source of food for rats?

Cicada nymph populations under vetiver are not obvious from casual observations but removing a layer of soil about 25 mm thick will reveal the burrows in which they live. I would be interested to hear of information on cicada numbers in areas where rats are proving to be a problem in vetiver hedges. I also note that in some areas of Myanmar, *Datura* (a solanaceous plant) is sometimes placed around fields of root crops to deter moles who become affected by the toxic components in the roots of that plant. Is this method an option in vetiver hedges to deter rats?

Don Miller

77 Shelley Rd., Gisborne, New Zealand

### ***Moles Tunneling along the Rows of Vetiver***

One of my growers here complained loud and strong that moles were causing considerable damage to his new plantings. Apparently, they just tunnel along the row creating havoc! Whether they do this because the plants are on their chosen route or whether it is because they like eating the roots I have yet to find out. I will visit to see for myself soon. Meanwhile, he is applying a chemical which gasses them in their tunnels. Again I'll have to check what this is, how he is applying it and how effective it is.

Mike Pease

Coordinator, Europe and Mediterranean Vetiver Network, Portugal

*It seems that we are facing new pests of vetiver the more we discover its new and varied uses and utilization, from rats to cicadas to moles. For rats, we can bring back snake (how?) as suggested by Dick Grimshaw, but what about cicadas and moles? Anybody has any ideas to fight back these creatures?*

*As one who has never have experience seeing these creatures in the vetiver filed, I can only deduct from the evidence above that cicada nymphs take some nutrition from vetiver roots (as suggested by Don Miller), thereby attracting rats and possibly moles (as they are closely related). In the Philippines, maya birds (Lonchura malacca) have been found to build nest among unpruned vetiver dense leaves; snakes and rats are attracted to eat the eggs or even birds there. Thus, the presence of rats and moles may not indicate that they eat vetiver roots, but rather prey on cicada nymphs, birds, or similar creatures, just like snake is attracted to vetiver hedges to prey on rats. – Ed.*

### **Date of ICV-3**

We have got official approval for the Third International Conference on Vetiver (ICV-3) from the Ministry of Science and Technology, but it does not relate to fund. We propose ICV-3 to be held in Guangzhou city, Guangdong province, Southern China, on 18-22 October 2004.

Liyu Xu, Coordinator

China Vetiver Network, Nanjing, China

*Congratulations on getting the approval. It is a pleasure to know that China will definitely host the ICV-3. The place is most suitable since it can be reached by plane, rail and boat from Hong Kong as well as by air from other countries and it has excellent hotels and other facilities. Besides, it is in the tropics where vetiver thrives well, and of course, with many demonstration sites for field visits. The duration is also quite good, not too cold and not too hot. I am sure we, the vetiverites, are all anxious to attend ICV-3 whose theme will be “Vetiver and Water”. Knowing the date and venue well in advance is good so that we can make our plan ahead of time. – Ed.*

### **VGT in New Caledonia**

I live in New Caledonia, a French island in Southwest Pacific. Joan Miller told me to ask you if you were looking for coordinators or representatives in some countries. I am 50 years old and presently a senior agronomist working for a governmental extension service. Vetiver Grass Technology was used in the past in New Caledonia in relation with the cultivation of coffee, beans maize and grapevine. My purpose is to rehabilitate those uses, and also for nickel mine rehabilitation and several other uses. Please let me know more about the coordinators and representatives.

Georges Donskoff, VU 15

Nily, 98880 La Foa, New Caledonia

*Although New Caledonia was not among the 22 countries in our list of the proposed members of PRVN, but since it is located within the Pacific, there is no reason why we cannot accept New Caledonia as a new member of PRVN, especially when we have someone like you who have experience and interest in the VGT and are willing to help us. Thus, may we request you to be the Country Representative from Caledonia in PRVN. You are also the National Coordinator to perform any activities on VGT in your own country. We are happy to provide you with a set of documents and CD-ROMs to be used in technology transfer. If you need anything else, please let us know. – Ed.*

### ***VGT in Samoa***

Our Environment Trust, METI (*Matuaileoo* Environment Trust Incorporated), recently completed a Rapid Assessment Report on land degradation in Samoa in the framework of the UNDP/GEF Capacity Development Initiative. The findings of this assessment were presented at a recently held Alliance of Small Island States (AOSIS) Conference on Climate Change, held in Apia from 28 July to 4 August 2000. As a result, we have been approached by the FAO local office and invited to take the required steps to become the National Coordinator of the Pacific Rim Vetiver Network for Samoa. Several areas in Samoa, especially two watershed and catchment areas that feed the rivers supplying the Samoan capital are in urgent need for remedial action to halt further soil erosion and water runoff.

Our organization has set as its main goal 'capacity building of grassroots' communities towards self-reliance'. As such, VGT would be an important component of rehabilitation programs involving villages in areas where land degradation has become problematic.

Walter Vermullen

Director of METI, Samoa

*Thanks for your interest to be PRVN's National Coordinator for Samoa. On behalf of the Coordinator of PRVN, I welcome you to our family of PRVN vetiverites, and hope that you will continue to work on this noble undertaking. I am impressed with the kind of work you are doing with METI for capacity building towards self reliance based on VGT. – Ed.*

### ***Vetiver in Cambodia***

I am working for Jesuit Service Cambodia (JSC) as Agriculture Advisor for their Rural Development programs and Technical Training School for people with Physical Disabilities. We have been exploring small scale integrated farming techniques for a number of years now. I



have just returned to work here after being away for four years, but in 1996 we actually had some vetiver grass growing on our experimental farm which I had brought from Australia with me. Unfortunately in the years since it has disappeared, probably from cows eating it. I am keen to establish some vetiver grass here again, particularly to experiment planting it around newly constructed family and village ponds to prevent erosion and silting after heavy rains. Silting reduces the depth of the ponds considerably, and with a high evaporation rate, shallow ponds dry up completely in March and April, leaving families without water for gardens and animals. In the past we have grown lemongrass (*Cymbopogon citratus*) but this suffers badly in the dry season. I am looking for a source of vetiver grass tillers either here in Cambodia, or in Thailand. Would you know anywhere I could get some please? I read that there is a country representative here in Cambodia now, I will endeavor to contact him too. Many thanks for your time.

Rob Allsop

Jesuit Service Cambodia

*I am glad that you are doing this kind of work in Cambodia, the country which needs your help as well as the vetiver grass to protect their valuable soil from further erosion. The best place for you to obtain vetiver tillers is from Thailand since it is the most convenient place and we are most anxious to provide such assistance to our neighboring countries. As we are going to organize a training course on Vetiver Systems in November, and two Cambodian trainees have been earmarked to get the Heineken Fellowships to attend this course, they should be able to obtain such planting material and brought back with them to Cambodia. We have arranged to send you vetiver documents, CD-ROMs, etc. which might be helpful for your works, as well as the prospectus for the training course and you are most welcome to nominate candidate(s) for this course. – Ed.*

#### ***A Request from the Andean Vetiver Network***

I am the Head of the Andean Vetiver Network in Chile and South America. We are going to introduce Vetiver plants in Chile and my interest is to make a technical visit to Australia, China and Thailand. Do you know any Vetiver Research Center in Australia, China or Thailand where we could get some experience in terms of fields nurseries, gully erosion control and slope stabilization in dry areas where annual rainfall is around 250-400 mm with 6-7 months dry period? The idea is to spend 15-20 days in the field in relation to this technology. My email is [rialmoca@conaf.cl](mailto:rialmoca@conaf.cl).

Mauricio Calderon

Andean Vetiver Network in Chile and South America

*Of course we can provide you with the names and addresses of "Vetiver Research Centers" in Australia, China or Thailand, but since we are going to organize a training course on "Vetiver System" in Thailand in November, why don't you take this opportunity to be with us. After that you may decide to continue to China and/or Australia. We have arranged to send you the prospectus for this training course. – Ed.*

***From Madagascar with Love and Thrill***

I just want to send a short note to say that the work of Dr. Uthai Charanasri and Mr. Diti Hengchaovanitch (*ORDPB consultants on vetiver for rehabilitation work in Madagascar, also see their report in this issue – Ed.*) is unfolding very nicely. They just came back from a week on the FCE railroad line yesterday afternoon. We are indeed THRILLED by the inputs from both of them. My wife Karen, a consultant for the FCE railway, spent all week with them and is finding that their inputs are really magnificent. M. Gilles is also very excited about the inputs of new ideas and information. I can't say enough about how appreciative we are of these contributions. This next week the two of them will do a couple of other site visits but also begin to wrap up their work with reports and then presentations here in Fianarantsoa and also in Antananarivo. I will fly up to Antananarivo with them and participate in the various protocol with the honorary consul to Thailand and ministerial delegations.

Mark Freudenberger

Regional Director, Landscape Development Interventions Program

Fianarantsoa, Madagascar

*We are also happy and feel proud of the two consultants who worked on voluntary basis to help Madagascar as a service provided by the Office of the Royal Development Projects Board. Their full report will be published by the Pacific Rim Vetiver Network shortly. – Ed.*