

# THE EUROPEAN AND MEDITERRANEAN VETIVER NETWORK (EMVN)

A Periodic Newsletter

Number 6

December, 2001

## The Great Hedge of India

Recently, I read Roy Moxham's "The Great Hedge of India" published by Constable, 2001. Regrettably, the hedges in question were not Vetiver! This hedge was constructed by the Customs Service to prevent salt smuggling. In 1869 it covered a distance of some 3,700 km--yes, truly. The hedge followed the Indus down through what is now Pakistan, skirted Delhi, continued to Agra, Jhansi, Hoshangabad, Khandwa, Chandrapur and Raipur and finished at the Mahanadi River in what is now the State of Orissa. Would that this effort had, instead, been channeled into constructing Vetiver hedgerows. It does make one realise what can be achieved if the will is there. Of course the rationale for building the hedge in the first place makes shocking reading as the salt tax hurt most severely the poor and the wretched. In more recent times (1930), Mahatma Gandhi brought the inequality and unfairness of this tax into international focus through his famous 'walk' of protest. The hedge was chiefly composed of masses of dwarf Indian plum, supported and strengthened by stakes. This plum has long spikes that defy entry. The mature, live hedge was over 4m high and about 2-4m thick. Other species that were used in the hedge's construction were: the babool, carounda, prickly pear, euphorbia and tamarind. Nowadays, there is little left of the hedge as most of the species used died off after less than 100 years. By coincidence, the author was the after-dinner speaker at a Conference that I attended in Birmingham, UK in September--see opposite.

## Information Dissemination

Dick Grimshaw has recently constructed a 'Discussion Board' that can be found at <http://www.vetiver.org/discus>.

The purpose of this TVN Discussion Board is to open up dialogue about the Vetiver System (VS) and to involve a greater number of users in the discussion, at least those who use the internet. It could prove to be a valuable tool for disseminating international experiences on Vetiver-related matters. Members of EMVN are encouraged to make use of it.

## Conferences

In early September I attended a Conference of the International Association of Landscape Ecology, held at Birmingham University, England and made a PowerPoint presentation in support of a paper and poster display that Paul Truong and I had prepared.

Subsequently, Harry Nijpels and I refined the presentation for more general application. CD-ROM copies of this are available for general use within TVN, Contact Dick Grimshaw, [dickgrimshaw@vetiver.org](mailto:dickgrimshaw@vetiver.org)

In early October Joachim Boehnert organized a Vetiver stand at the International Conference on "Water - A Key to Sustainable Development" held in Bonn, Germany. Paul Truong contributed several posters and EMVN a 2m tall dried Vetiver plant, grown originally on Sandy's Robertson's farm in the Algarve, Portugal. After the Conference, our plant was taken by The German Foundation for International Development for classroom use. The background of the Conference was that "global water problems lead to crises in all parts of the world. 1.2 billion people - in other words 1 in 5 of the global population do not have access to sufficient clean drinking water."

"At the United Millennium Assembly, the world's heads of state agreed to at least halve this share by 2015. An additional problem is that waste-water from around 2.5 billion

people cannot be disposed of hygienically. Polluted water is the number 1 cause of disease. Climate change, with its increasing floods and droughts further aggravates these problems. At the same time, poor water supply reinforces poverty and gender inequality." The above is quoted because it impinges on one of the important facets of the VS that will be the subject of the next International Vetiver Conference (ICV-3) when the theme will be "Vetiver and Water".

ICV-3 will be held in Guangzhou City of Guangdong Province, China from 6<sup>th</sup> - 12<sup>th</sup> November, 2004. This decision follows a visit to China in November by Dr. Sumet Tantivejkul, Secretary General of the Chaipattana Foundation and Chairman of the Continuing Committee of the International Conference on Vetiver and Dr. Narong Chomchalow, Secretary of the Committee. The Conference is being organized principally by Professor Liyu Xu, Coordinator of the China Vetiver Network.

Participants can expect to see something of the considerable activity that has taken place over recent years in various fields of Vetiver usage within Guangdong Province.

The overall issue of the desirability of promoting a 'Vetiver presence' at Conferences, in general, is debatable. EMVN experience is that attendance is costly and follow-up response only very modest at best. EMVN periodically receives invitations to present papers at conferences that cover such aspects as: soil conservation, ecological management, water conservation, arid region management and desertification. It is doubtful if there is much net benefit by attendance. For the foreseeable future, therefore, EMVN will not be represented at the various conferences to which it is invited.

### **Vetiverim Newsletters**

The Pacific Rim Vetiver Network (PRVN) generously sends EMVN a number of copies of each of its outstandingly well produced Newsletters, that can also be viewed on [www.vetiver.org](http://www.vetiver.org). The editor is Dr. Narong Chomchalow. EMVN is happy to pass on copies to its members on request.

### **The Eden Project**

I have written of The Eden Project near St. Austell, Cornwall, England in previous Newsletters. On 9<sup>th</sup> September I visited the

project again, specifically to view the Vetiver display and was taken around by Dr. Tony Kendle, the Project Director. The plants, displayed in the West African section under 'Alley Cropping' are looking well but, currently, the spacing between plants is too wide for effective hedgerow demonstration. This will be rectified. The Eden Project has a dynamic concept and will develop further over time. It was only opened in March 2001 but has received extensive and favourable media publicity and excellent attendance results. Over time it can be expected to develop further the theme of 'Man's Association With Plants-- Past, Present and Future', perhaps through more specifically focused interactive displays outside the main biomes. Hopefully, The VS will be included in this widening of vegetative horizons to the general public.

### **River Bank Stabilization**

Vetiver has been used successfully to stabilize river banks in the Far East and in some African countries. In this context, it was interesting to receive a comment from Dr. Vito Sardo of Catania University, Sicily that one of his students was working on the potential of Vetiver to stabilize the banks of the River Nile in Egypt. Anecdotal evidence indicates that Vetiver existed in Egypt in the 1930's. However, it is likely that it was used then only for scent production. Despite various enquiries we cannot determine whether Vetiver still exists in Egypt. In any event, Vetiver would surely do well in stabilizing the banks of the River Nile.

In this context there is now considerable focus being given to the potential of Vetiver for river-bank stabilization, especially in such countries as Vietnam and Thailand. Paul Truong and I have both commented on the erosive effects of increased high-powered river traffic on the banks of the Mekong and its tributaries.

### **Worms**

During my attendance at the IALE Conference, mentioned above, I met with Dr. Maurizio Paoletti from the University of Padua, Italy. He expressed an interest in determining worm activity around Vetiver roots. This could be valuable research on a subject that, as far as I am aware, has not been studied to date. The problem, as always, is funding. Any suggestions are welcome.

### **What's The Catch?**

I am sure that I am not the first speaker on Vetiver to be asked the question "Vetiver sounds too good to be true -- What's the Catch?". In the case of EMVN one major 'catch' is that the VS is inapplicable in more northerly, colder climates -- in broad terms, say 40° North. Another, is the problem that a small-scale farmer faces when deciding whether to establish Vetiver hedgerows on land that would otherwise be used to produce vital subsistence crops. It is difficult for him/her, or even the farm extension agent, to put a cash value on lost topsoil and increased retention of soil moisture and plant nutrients. Yet again, Vetiver is not the best animal fodder, being palatable only when young. Perhaps in our presentations, we should comment a little more on those few of Vetiver's frailties as to do so would make the VS 'more believable' and therefore more digestible to non-believers!

### **Overstory**

In the past this Newsletter has mentioned the publications of 'Overstory', produced by Dr. Craig Elevitch in Hawaii. Overstory is a free bi-monthly, on-line newsletter that I would describe as having a 'permaculture base with specific focus on agro-forestry'. Many of the articles are on subjects that directly relate to our own work on Vetiver. Recently, Craig has done an excellent job in producing an attractive Overstory book that contains the first 75 editions. These include an article on the Vetiver System. The book is obtainable via <http://www.agroforestry.net>.

### **News from the Region**

A start has recently been made to determine the potential of Vetiver in Turkey. Drs. Nusret Direnc and Muhammet Kilci are examining Vetiver's potential in Izmir Region, along the western seaboard, particularly related to forestry development. Temperatures range from about -8°C to 43°C and annual precipitation is about 700mm. Experimental areas include those having: saline, sandy and alkaline soils and include forestry lands, dam basins and locations polluted by mine tailings. Vetiver has considerable potential in Turkey and, it is to be hoped that especially private landowners but also government departments will follow this lead and establish Vetiver applications in other locations in Turkey. The initial plant importations came from Dr. Vito Sardo of Catania University, Sicily.

Vetiver activity is also under way in Israel particularly due to the work of Drs. Leo Toledano and Dudai Nativ. Initially, this is focused on the stabilization of soils disturbed by engineering activities, notably road construction.

In early October I visited Tuscany, Italy where Ing. Claudio Zarotti and Professor Alexandro Boxxini were able to show me two of the locations where vetiver is being demonstrated. One was on steep agricultural land; the other stabilized the banks of a drainage canal on an industrial complex. Claudio recently sent me photographs of some of the many locations and different agricultural and bio-engineering circumstances in which Vetiver has been planted in Italy in recent years. All plantings show good growth. Claudio links the supply of plants to his built-in extension services, thus ensuring correct and effective field application.

Dr. Vangjo Kovaci wrote recently from Albania to report on the extension of Vetiver field planting in areas where the climate favours its use. Expansion of locations in Albania includes soil stabilization around reservoirs. He is restricted in developing activities further by lack of finance.

In Spain an EU-funded, 'Eco-Slopes' project should yield valuable information on Vetiver's potential in the South-East of the country. The project includes Vetiver grass establishment and root and stem growth monitoring together with soil moisture monitoring. Importantly, the project will measure the moisture requirements of Vetiver grass under hostile soil and climatic conditions. The project involves the Universities of Amsterdam and Murcia.

The spotlight now turns on Southern Greece, Morocco and Tunisia from where I have received no reports of Vetiver trials or field applications having been established. It would be pleasing to report in the next Newsletter that a start has been made in these countries.

A recent EU report highlighted the environmental damage, leading to desertification, caused by intensive olive oil production. The comment was made that "Soil erosion is probably the most serious environmental problem associated with olive farming". It states further "Inappropriate weed-control and soil-management practices, combined with an inherently high risk of erosion in many oil farming areas, is leading to



desertification on a wide scale in some of the main producing regions, as well as considerable run-off of soils and agro-chemicals into water bodies".

The principal countries to which these remarks are directed are: Spain, Italy, Greece and Portugal. The Vetiver System is one way of addressing these problems. Yet, no notice is apparently being taken by authorities in these countries of a technology that is available, proven and inexpensive. Readers of this Newsletter please take note!

### **A Detective Story**

It is extremely important that we know as much as possible about the various Vetiver varieties and accessions that exist globally. Some time in the future pest or disease problems, that are mercifully absent at present, may arise. If that situation does occur, knowledge on the performance of different Vetiver sub species could become critical to continued Vetiver usage. The DNA analysis work of Dr. Bob Adams', now in Hawaii, is therefore vitally important to our full understanding of Vetiver.

In EMVN we are trying to run-to-earth the possibility that there may have been an importation of Vetiver into Europe some centuries ago -- EuroVetiver?? Reading University in the United Kingdom has Vetiver plants that were obtained from Kew Gardens in relatively recent times. Kew, in turn, obtained their plants from Wilhelmshoe Bargpark Gardens, Kassel, founded in 1700. I have been assured that none of the Kassel plants were released for use outside the Gardens. It now seems possible that 'Kassel' may have obtained their original plants from the Aldobrandini family in Italy. This patrician family, that contributed more than one Pontiff, had a large estate, Quirinal Hill, in Rome that dates beyond the 15<sup>th</sup> century and, as was the custom, exotic plants were introduced. Whether these included Vetiver remains an open question. In any event, the Quirinal Hill property appears to have been abandoned, sold or whatever and the family moved to another, located some kilometers from Rome at Frascati. This was built in the 16<sup>th</sup> century. Whether Vetiver ever existed or still exists on this estate is the subject of the detective story. Our sleuth on the spot who is trying to find out more is Professor Alessandro Boxxini. However, if any reader of this Newsletter can contribute to the detective work it would be most helpful.

### **Seeding Varieties**

Because the issue arose recently, it does no harm to further emphasise the point that, under no circumstances, should the seeding, North Indian, varieties of Vetiver be used. One of *Vetiveria zizanioides*' vital morphological characteristics is that it is not invasive. It does not produce viable seeds, has no stolons and has only very small rhizomes. So it is safe. We must protect this attribute by not using seeding varieties.

### **Propagation**

Criss Juliard, in Senegal, recently stumbled on an interesting aspect of Vetiver propagation. He noted bare-root plants that he had received from South Africa having developed new white roots from the crowns in transit. The plants had been dampened well and sealed in boxes. They were 8 days in transit. Four weeks after planting Criss obtained almost 100% 'take'. His conclusions are that, under stress, the plants liked the dark, the cold and the damp and subsequently sprung roots in their effort to survive. In EMVN we had similar experiences when receiving or sending bare root plants. One conclusion could be that there is no necessity to ship bare root plants by expensive, express means. Good quality slips that are well moistened (we have wrapped them in wet newspaper) can be packed in suitable containers (durable against becoming soggy). They will not only survive a long journey well but will put out fresh shoots that result in a high percentage take at planting. EMVN has received plants that took 3 weeks in transit but yet survived. This propagation method, using a cool, dark and damp facility could, of course, be created artificially.

### **Pests and Diseases**

Recently I was contacted by Dr. Lapiere who leads a team in France that is preparing a book on virus diseases of Poaceae. Specifically, the question is raised as to whether aphids and mealybugs are serious pests of *Vetiveria zizanioides*. As far as we know they are not. But, Mark Dafforn is pursuing this to determine what growers have experienced in regard to pest and diseases in Vetiver use globally.

Perhaps other readers of this Newsletter can contribute experiences.

An interesting and related phenomenon is whether Vetiver roots are attacked by nematodes. There is some indication that

Vetiver roots may repel nematodes. User experiences are invited as to whether nematodes are or are not a problem to Vetiver and whether, therefore, it may be correct to conclude that this pest is repelled by the roots. If this was so it would not be surprising since ground up Vetiver roots have been used for centuries as a domestic insect repellent.

### **The Economic Value of Vetiver**

There is no question that Vetiver has a considerable economic value in protecting against soil erosion, water run-off and loss of plant nutrients. Its economic value as an inexpensive means of stabilizing steep slopes disturbed by engineering structures such as roads, railroads and earthen dams is also increasingly being recognized within the engineering profession. We are also likely to see increasing awareness of the economic potential of Vetiver in controlling pollution.

Nevertheless, to small-scale farmers these somewhat intangible benefits may be difficult to recognize. It is a challenge to the extension services to persuade farmers of the long-term benefits of soil conservation and the much more immediate, crop yield benefits that are rapidly discernible in retaining soil moisture and plant nutrients between hedgerows. It is difficult for a small-scale farmer to allocate some of his scarce land resources to the planting of a Vetiver hedge where this removes land from subsistence agricultural production. It represents a major extension challenge to show the benefits. This Newsletter suggests that within TVN we should have access to more photographic evidence of 'before and after' or 'with and without' situations. For instance, in those Latin American countries that were devastated by Hurricanes George and Mitch in 1998 there were instances of small-scale farms, protected by Vetiver hedgerows, holding their soils and their productivity whereas unprotected farms were devastated by the erosion and soil collapse that occurred. Similarly, it would be valuable to have available photographic evidence to demonstrate the effect on crops that had been subject to drought, some protected by Vetiver hedgerows and others not. Hopefully, these would demonstrate the impact on crop yield of increased soil moisture as a result of water run-off controlled by the Vetiver hedgerows.

### **EMVN Finances**

From time to time I comment on the limited financial resources on which EMVN operates.

The following is a summary of incomes and expenditures during 2001.

Income: TVN provided a subvention to EMVN of US\$1,000 to supplement what was carried over from 2000 (US\$1,200). Added to this is US\$570 that came from donations. These included US\$430 generously provided by IALE to cover traveling to England to attend their Conference and US\$50 to assist with air freight costs of shipping a dried Vetiver plant to Bonn for the Water Conference. US\$120 was received from private donations and these have been gratefully acknowledged.

Breakdown of expenditures is as follows: communications US\$280; printing, stationery and computer use US\$690; travel and conference fees US\$950; and demonstrations US\$380.

Regrettably, the conclusion from the above figures is that EMVN cannot continue to participate in Conferences or the like without specific subvention. EMVN will, however, continue to operate its communications networking for the time being.

### **Network Coordination**

Global activities of TVN have expanded considerably over recent years and are now beyond the means of voluntary effort to service. Arrangements are being made to use the services of a private, non-profit, US-based, international development organization (ACDI/VOCA) that would provide a full-time coordinator who would have the backing of an experienced and well-funded, non-profit development agency.

TVN's Board of Directors would continue to set policy, networking would continue as before and TVN officers would be able to spend more time on qualitative support to Vetiver users. Of particular importance, they would be able to allocate more time to fund raising.

More information on ACDI/VOCA is at <http://www.acdivoca.org>

### **HomePage and EMVN Coordinator**

Information on the Vetiver Network and the Vetiver System can be viewed on <http://www.vetiver.org>. There is a section on EMVN affairs. I can be contacted at Quinta das Espargosas, Odiaxere, 8600-250 Lagos,

Algarve, Portugal; tel/fax: 351-282-79.84.66;  
e-mail: [mikepease@mail.telepac.pt](mailto:mikepease@mail.telepac.pt)

