

# VETIVER'S POVERTY ALLEVIATION ACHIEVEMENTS PROPEL VETIVER DISSEMINATION IN INDONESIA

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## ABSTRACT

The isolated mountain communities of East Bali had survived for centuries on sloping upland areas with poor farmland due to extensive erosion, subsisting on cassava and corn with no road access, no health care, no schools and no access to the outside world. A community in crisis in western eyes – but to them it was the only way they knew. If only they had a road, they could see a future. East Bali Poverty Project (EBPP), requested by the village to help, introduced Vetiver, a grass that nobody had heard of, which facilitated that road access.

No money was available or spent to disseminate vetiver. It did the job itself. Vetiver soon became a powerful tool of change once its wide ranging properties were known, and the communities saw for themselves that the change was permanent. Once introduced, Vetiver moved with a domino effect, spreading from one place to another in the mountain, by word of mouth and by the passion of children who took the challenge of being the first generation with access to knowledge and the potential to improve their way of life. They planted vetiver on the hillsides, outside homes and learnt how to convert steep and arid land to lush vegetable gardens by strategically planted vetiver borders. Health improved, diets changed, children and parents got handcraft hobbies creating from vetiver roots, youths tended their vetiver nurseries and new organic vegetable gardens.

After one year, clear examples were available, and thanks to internet, could be shared with other organisations and institutions wanting to assist other communities with similar disadvantages. Internet research and email communication facilitated dialogue with world vetiver experts. EBPP's website, networking in Bali and Jakarta, regular newsletters and carefully worded and strategically placed paragraphs in the local media soon attracted many enquiries about the wonder grass called vetiver.

Collaboration with experts in fields of bamboo for reforestation and organic worm fertilisers, both proved to be perfect partners for sustainable environmental improvements in steep and barren mountain regions.

**Keywords:** Poverty, community, children, sustainable development, benefits

## 1 BACKGROUND: PERCEPTIONS OF VETIVER GRASS IN INDONESIA

Indonesia has much underproductive land due to difficult farming conditions on steep and arid terrain, rapidly varying contours, high elevations, torrential monsoon rains and high winds, creating two main problems for farmers:

- Sloping upland areas cannot be farmed as there is no stable platform for cultivation needed to farm many high value crops and
- The combination of the sloping land, no barriers preventing runoff, heavy rains and winds create extensive soil erosion, much ending up in oceans, lakes and rivers, giving a domino effect of degraded land and environmental damage.

Vetiver grass (*Vetiveria zizanioides*), which has been grown in Indonesia for around 100 years, was never promoted as a sustainable solution for these problems nor as a preventative measure to reduce landslides and mitigate erosion. Vetiver was farmed primarily in Garut, West Java, to produce essential oil, known in Indonesia as *minyak akar wangi* (fragrant root oil) and more recently, handicrafts and table mats from the fragrant roots. Ironically, many farmers apparently experienced massive erosion after *over*-excavating the soil when harvesting the vetiver to optimise root quantities for oil production resulting in vetiver grass being blamed for “the severest of soil losses”.

It was not therefore surprising that in 1998 when Yayasan Ekoturin’s East Bali Poverty Project (EBPP) sought sustainable solutions to stabilise mountain track verges and steep and arid mountain slopes in the remote and impoverished east Bali mountain village of *Desa* (village) Ban, internet research proved fruitless and experienced Indonesians and foreigners could only suggest plants such as lemon grass (*Cymbopogon citratus*), elephant grass (*Pennisetum purpureum*) and Caliantra (*Caliantra calothyrsus*). Another grass suggested locally as a solution was *belu*, growing wild in Desa Ban and similar in appearance to vetiver grass, yet with very invasive shallow roots and used mainly for roof thatching. None of these could even be considered as sustainable solutions!

Finally in September 1998, a photocopy of “Vetiver Grass – A Thin Green Line Against Erosion” was given by a British resident of Bali who used vetiver roots in her soaps and spa products, suggesting vetiver may be the solution to our road and land stabilisation problems.

Vetiver grass was clearly relatively unknown in Indonesia outside of root products business and whilst disseminating vetiver to isolated communities would require a sensitive community-based approach, it would certainly be a much greater challenge to disseminate vetiver throughout Indonesia.

## 2 INTRODUCTION

Ekoturin Foundation’s East Bali Poverty Project (EBPP) was established in 1998 as a non-profit organisation, with the specific goals of reducing poverty and promoting culturally sensitive sustainable social economic development, prioritizing children, in Desa Ban, the most impoverished and isolated mountain village in Bali.

Vetiver was introduced to the project in March 2000 as the only practical and sustainable solution to ensure the stability of a newly cement-stabilised access road we had facilitated for thousands of families to get out of their village – a previously narrow and dangerous dirt track, via the saddle between the two mountains of Agung and Abang. Lack of any previous vehicular access meant that most government services could not get into the village and thousands of people from many mountain hamlets had *never* left their village. Without electricity, schools or any other form of communication, they were effectively cut off from the outside world, living as their ancestors: cassava and corn subsistence farmers with one or two cows, frequent sickness and high child mortality as the norm.

By 2005, Vetiver systems of conservation and stabilisation had become one of the many indispensably necessary elements in EBPP’s comprehensive, holistic and integrated approach towards model sustainable social and economic development programmes for one of the most arid and impoverished regions of Indonesia, as documented in EBPP’s 2006 paper, “Vetiver Improving Lives of Impoverished Indonesian Subsistence Farming Mountain Communities, Led by Children” (Booth & Adinata)

The rapid acceptance of vetiver by this impoverished community was a direct result of the close partnership and relationship established with the whole community at the outset. The most essential first step was developing a mutual trust between all of the 2,500+ families of the 19 scattered hamlets that comprised the village *and* our small team of village volunteers in 1998, with David Booth's promises of "no money or rice – just your 100% commitment of motivation and participation in programmes that you choose that will lead your communities towards food security and sustainable social and economic development". The other key factor was that all projects initiated were at the request of the community, the key stakeholders, required their full effort and contribution of local materials where necessary, and ownership was theirs on completion. The introduction, acceptance and development of vetiver as an integral part of community life is detailed in EBPP's 2003 Paper, "Vetiver Grass: A Key to Sustainable Development on Bali" (Booth, Adinata).

This paper details EBPP's vetiver dissemination processes since 2000, starting at village level, that have propelled vetiver dissemination in Indonesia.

### **3 VETIVER DISSEMINATION AT VILLAGE LEVEL**

#### **3.1 Dissemination of Vetiver Benefits to an Isolated and Illiterate Farming Community**

Disseminating information to the widely spread communities in four different hamlets that they must *all participate* to plant a "foreign" grass - as nobody had heard of vetiver - if they wanted a road to the outside world, could only be done as all previous communication: by word of mouth from EBPP field team, as every adult was illiterate.

Sensitively packaged *verbal* awareness information to leading community figures, building on the mutual trust established with all communities in 1998 soon ensured the communities' commitment to walk the 5-8 kilometres to plant a grass they had never heard of as (a) they needed the road that they had recently trekked the same distance to build and (b) they knew that the Elephant grass, Belu and Caliandra, which presently grew on their hillside land for cow fodder, were *not* effective in preventing soil erosion.

. *Children*, given the mandate by their parents to lead sustainable social and economic community development since the launch of EBPP's first integrated education programme in September 1999 ("teach our children so that they can teach us as we cannot learn from outsiders") directly led the planting of 80,000 road verge vetiver slips after seeing demonstrations, making holes with sharpened bamboo sticks. In only two days, 3km of dirt road verges were planted with vetiver, which ensured that no landslides ever closed this new access road.

The children's motivation, pride and leadership set the stage for EBPP team to introduce all new vetiver initiatives to the children, who would lead the community forward, empowered with relevant and integrated education in EBPP schools.

EBPP's stages of introducing the many *vetiver-powered* sustainable solutions to initiate community based poverty alleviation, with the key principles of "Helping Disadvantaged Children and Communities to Help Themselves", shown in Table 1, "Vetiver Introduction, Dissemination and Extension to Rural Farming Communities and Schools in Bali from 2000 to 2006".

Year	Stages of Vetiver Systems Introduction for Poverty Alleviation	Pilot Vetiver Dissemination to Impoverished dry-land Subsistence Farming Communities to Empower by seeing Vetiver's Benefits and Sustainable Development Potential	Development of Vetiver Dissemination and Training for farming communities and schools - "Learning by Doing"
2000	<b>Bio-engineering solution:</b> Stabilize steep road verges, giving first-time access for thousands of people to health centres, markets and potential economic development	(i) Establish mutual trust between EBPP & community; (ii) clarify differences between vetiver & known grasses; (iii) use culturally sensitive benefits-based approach in awareness and education programmes in group discussions, emphasising ownership through 100% community participation in planting; (iv) capacity building and empowerment to use vetiver for sustainable development and environmental improvement	1) Dissemination to <b>illiterate farmers</b> by sensitive " <b>for the people by the people</b> " vetiver field training, emphasising potential benefits for future generations. Included maintenance, monitoring and recording vetiver growth and benefits; 2) Vetiver training refreshed annually
2000-2001	<b>Seeing Vetiver grow:</b> Vetiver incorporated into village school curriculum & first pilot school organic vegetable garden and pilot handicrafts from roots	(i) Children plant vetiver slip in tall sand-filled pot outside school to see root growth and slip development, record weekly growth and learn vetiver properties and benefits for future development. <b>One</b> year's root growth of 2.2 meters used for crafts; (ii) Children plant first village vetiver hedges for school organic vegetable gardens on steep and arid volcanic land	1) EBPP trains and gives vetiver stock to Indonesian <b>Permaculture Foundation</b> (IDEP) to establish pilot permaculture projects for <b>Central Bali</b> farmers groups; 2) EBPP trains <b>South Bali school</b> in vetiver technology and handicraft making
2001-2006	<b>Preventing farm soil erosion:</b> Vetiver hedges support horizontal terraces for school organic vegetable gardens; vetiver roots and grass enter creative art, craft & roof thatching classes	(i) Parents " <b>see by example</b> " children's school gardens and are keen to learn and replicate on their land; (ii) children educate/train parents and establish family and community Vetiver nurseries; (iii) EBPP gives vetiver slips & training to Village Head who sees benefits and joins EBPP's commitment to disseminate village-wide for erosion control, arid farmland improvement and optimisation of all vetiver benefits	1) EBPP staff & children give Vetiver slips and training to 85 poor <b>North Bali School</b> children from deprived families on the school's steep and arid land; 2) Vetiver training & stock to poor <b>North Bali Coast village</b> for ocean protection & rehabilitating arid and eroded hill slopes
2002-2006	<b>Food security, led by children:</b> organic vegetable farming on steep and sandy land to replace cassava and corn as staple: improved health, food security and sustainable development	(i) Participatory community discussions using conceptual "before, during and after" sketches (based on children's school garden success) initiated <b>new</b> farmers' groups to learn organic farming for food security and eventual larger terraced organic vegetable farms by " <b>learning by doing</b> ", taught by their own children for the 1 <sup>st</sup> 6 months; (ii) local youths from all hamlets join EBPP's Vetiver Team as key trainers for farmers co-ops	1) EBPP gives vetiver to Bali's organic worm castings expert to include in her training for <b>W &amp; N Bali</b> farmers' groups; 2) 2005: <b>EBPP's Vetiver training video</b> produced, supplementing vetiver training and dissemination for farmer's groups, schools, universities, Government, etc.

2004-2006	<b>Preventing destruction of mountain spring safe water supplies for 1,300 families, prioritising young children</b>	Local community trained to plant vetiver to stabilize new soil fill after mountain spring water supply almost destroyed by torrential rains and also plant vetiver hedges to divert future flash floods. Daily maintenance and monitoring empowered community to accept full responsibility for future maintenance.	1) 2006: <b>“Vetiver Grass – A Hedge Against Erosion”</b> 1 <sup>st</sup> Indonesian version 2) 2006: <b>IDVN’s 1<sup>st</sup> Vetiver Training workshop for Indonesian Government Forestry Rehabilitation specialists</b>
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**Table 1 Vetiver Introduction, Dissemination and Extension to Rural Farming Communities and Schools in Bali from 2000 to 2006**

**PROVEN VETIVER BENEFITS TO MOUNTAIN COMMUNITY OF 3,000 FAMILIES SINCE MARCH 2000 – “FOR THE PEOPLE BY THE PEOPLE”**

**VETIVER: Bio-Engineering Tool for Sustainable Community Infrastructure Development = Ability for Sustainable Development + Improved Living Environment**

- ? **Stabilize 20+ km of Road Verges & Embankments of steep and sandy slopes:** Stabilize soil, prevent erosion and allow year round travel without risk of landslides or failure
- ? **Protect Mountain Springs Safe Water Supply for thousands of families :** Prevent erosion from flash floods & improve flow by conserving rainfall
- ? **Enable School Construction :** Stabilize volcanic ash fill for safe school and playground construction & green borders
- ? **Stabilize Hillside Homes :** Hedges prevent erosion & landslides and facilitate attractive permanent landscaping

**VETIVER: Erosion Control + Conserved Soil & Water + Evergreen Leaf Growth = Improved Nutrition & Health from Organic Vegetables + Economic Development**

- ? **Vetiver Nurseries in Land too Steep for Crops:** For community benefit owned & managed by local people for local people
- ? **Organic Vegetable School, Kitchen & Community Gardens on steep volcanic slopes:** Mature vetiver hedges stop erosion, conserve soil/water, provide on-site mulch and form pest resistant borders for organic vegetable gardens for family nutrition, improved health & eventual economic benefit from sales
- ? **Cow Fodder:** Vetiver leaves from organic garden borders and nurseries providing year-round cow fodder, especially in dry season when other grasses and leaves become scarce

**VETIVER: Integrated in Education Curriculum For Creativity, Pleasure & Eventual Business from Vetiver Home Industries & Sales**

- ? **Vetiver in School Education Curriculum:** Vetiver Technology & benefits integrated in EBPP’s school curriculum for class and field activities
- ? **Vetiver Handicraft Classes:** Since 2001 as regular class in EBPP school curriculum to develop creative minds and skills, recreation at home, potential future home industry and pleasure
- ? **Vetiver in School Art Classes:** All children routinely draw/paint Vetiver hedges as part of community life art development (see examples in EBPP’s “Art of Learning by Doing” book)
- ? **Vetiver Roof Thatching Classes**

**Table 2 Proven Vetiver Benefits Enjoyed by a Mountain Community of 3,000 Families from 2000**

Column 1 lists “Stages of Vetiver Systems Introduction for Poverty Alleviation”, with column 2 summarising community participation and acceptance, after “seeing by example” from their children and “learning by doing” for their future growth.

Vetiver’s rapid impact and sustainable benefits to this once forgotten mountain community are shown in Table 2, “Vetiver Benefits to Mountain Community of 3,000 Families Since March 2000 – ‘For the People by the People’”, all of the programmes now being accepted as models for rural community development and replication by the local government, national government and many foreign organisations.

### **3.2 Children Introduce Vetiver’s Properties and Benefits to Illiterate Parents**

Children’s successful organic vegetable school gardens and vetiver nurseries at all EBPP schools became the models for parents to request vetiver slips for nurseries and learning gardens in each hamlet in 2002, all of whom have now “graduated” and started their own vetiver-hedge-supported home vegetable gardens on steep plots near their homes, providing family nutrition year-round and vetiver is being passed on to neighbours. (See Table 1).

### **3.3 Children Disseminate Vetiver to Foreign Donors and Supporters**

EBPP’s donors and sponsors often visit projects they fund, whether education programmes, organic farming or others, and without exception, notice the vetiver hedges stabilizing the dirt roads leading to the various hamlets, yet none of them had ever heard of vetiver grass. Children then guide guests to their sustainable school gardens and explain the process of converting steep and arid land to lush vegetable gardens, with vetiver hedges as the first stage in newly cut terraces on previously steep and barren slopes. All donors see the sustainability provided by vetiver and are encouraged to continue supporting our programmes and disseminate vetiver information to others.

## **4 DISSEMINATING VETIVER AS A SUSTAINABLE DEVELOPMENT TOOL**

### **4.1 Vetiver Dissemination at Indonesian National Level**

EBPP, as a non-profit NGO, relies 100% on donor funding for all projects and since 2000 we have been fortunate to have our internet Homepage, PR design, PR publication costs and local media advertising sponsored by Bali-based companies that support poverty alleviation initiatives. All PR, promotion and dissemination is carefully and sensitively designed to target specific audiences interested to support, learn more or work with our foundation.

Since 2000, vetiver dissemination has been included as an integral element of poverty alleviation and sustainable community development in EBPP’s internet Homepage and often in our monthly “Sustenance” Newsletter, launched in May 2001, going out to over 1,300 recipients in over 30 countries.

Word-of mouth from satisfied donors, sponsors, friends and volunteers, who see direct results from small donations, with additional credibility from three international awards received since 2001, have added to the regular flow of vetiver enquiries received by email, telephone and walk-in visitors.

EBPP’s first *direct* dissemination of vetiver information and benefits was our Bali Vetiver Conference on 31<sup>st</sup> May 2000 in Radisson Hotel, led by Dr Edwin Balbarino, Founder

of Philippines Vetiver Network and attended by only 25 people from the government sector, private Bali-based companies and local NGO's. This was followed in August 2000 by a fundraising event *sponsored by* Radisson Hotel supporting children's sustainable nutrition programmes, the funds raised enabling EBPP to buy 200,000 vetiver slips from Garut in December 2000.

The positive publicity from these two events, followed by our vetiver dissemination in local charity bazaars, started a "domino effect" of enquiries about vetiver, from local schools, hotels, businesses and individuals, prompting David Booth to initiate a regular dialogue with leading vetiver experts Richard Grimshaw, John Greenfield, Paul Truong and Narong Chomchalow, who frequently provide invaluable vetiver advice enabling EBPP's fledgling Vetiver Network to provide good information, high quality vetiver planting materials and informative vetiver training programmes.

Table 3 shows the broad scope of dissemination tools and methods from the year 2000, together with the community and school-based vetiver training programmes that have helped spread the message of vetiver as a sustainable, cheap and effective tool for erosion control, environmental protection and a valuable children's vocational education subject.

#### **4.2 Vetiver Training Programmes for Farmers Groups, Schools and Government**

Vetiver training programmes started in late 2000, the first being for a new international school in south Bali after successful dissemination at EBPP's Bali Vetiver Conference on 31<sup>st</sup> May.

Children's creative art and craft development was a goal of EBPP's carefully generated PR, internet and media information. Programme replication is the goal for all of EBPP's sustainable development programmes.

From late 2000, schools, farmers groups and individuals were frequently requesting vetiver training courses as a result of successful dissemination, partly through the media, but mainly from word of mouth from either EBPP donors or volunteers.

The farmers groups and schools trained covered the whole geographical spread of Bali Island as shown in Table 1. In all programmes, vetiver slips and detailed information were provided to ensure sustainability.

#### **4.3 Vetiver Training for Indonesia's Forestry Rehabilitation Specialists**

EBPP held their first Vetiver Training Workshop from 29<sup>th</sup> May to 1<sup>st</sup> June 2006 in Bali for eight participants – 3 Certification Advisers from UK's Tropical Forest Trust (TFT) and 5 field Managers from the Indonesian Government-owned Forest Management Agency, PT Perum Perhutani (PP). They came to learn how to apply Vetiver (*Vetiveria Zizanioides*) as a sustainable erosion control and soil/water conservation solution in their programmes to rehabilitate thousands of hectares of teak forest and watersheds in Java and Kalimantan.

All participants received a comprehensive kit including our newly translated Green Book, "Vetiver Grass, A Hedge Against Erosion", CD-ROMs of EBPP's vetiver projects, EBPP's Vetiver Training video, A2-size vetiver posters produced by The Vetiver Network (TVN) and a copy of "The Art of Learning by Doing" which has a chapter dedicated to organic vegetable school gardens, made possible due to the power of Vetiver Systems (VS) securing terraces on steep volcanic ash slopes.

The 4-day workshop, with VS applications at the fore, aimed to illustrate that VS is an indispensably necessary component of a holistic solution that should not only include full

community participation in land improvement/rehabilitation techniques, but also *organic* fertilisers and other sustainable plants like bamboo, as well as the many economic benefits of vetiver roots and grass after harvesting.

#### **4.4 Vetiver Promotion and Dissemination Material Developed by EBPP Teams**

##### **4.4.1 Vetiver Training Video**

We continuously strive to make more information available, especially to share with other disadvantaged regions, prioritizing schoolchildren and farming communities. We are very proud that we now have an easy to understand Vetiver Training Video, presently in both English and Indonesian to complement our field training. With a running time of 30 minutes, the video gives many examples of EBPP vetiver programmes in the village, in the vegetable gardens and a very clear explanation of preparation and planting techniques. There is also a clear explanation by the Desa Ban village Head of the benefits vetiver has brought to his village. Filmed and produced by UK-based Sarah Matthews and The Brock Initiative, Sarah is trying to get funding to produce the video in different languages so that it can benefit a much more international audience, especially in the lesser developed southern hemisphere.

##### **4.4.2 “The Art of Learning by Doing” Book**

EBPP published a book in September 2005 entitled “The Art of Learning by Doing” telling the story of our village children’s lives from before starting school until graduating primary school. Fully illustrated with 105 children’s paintings, it shows how the power of vetiver penetrated all of EBPP’s school children lives from the time they saw how different vetiver was to their Elephant grass, ‘Belu’ and Caliandra tree roots in completely holding the sandy slopes, enabling them to plant many types of vegetables in steep school gardens and at home. It was no surprise therefore when all of the children started featuring vetiver terraces and borders on all of their landscape and home-life drawings in their creative art classes. The book was designed to be a resource for children, teachers and parents and we are presently developing a teacher’s guide to help other children to learn with the book, through East Bali Poverty Project philosophy of “see by example and learn by doing”. The book can be ordered directly from EBPP.

### **5 VETIVER DISSEMINATED WITH BAMBOO AND WORM CASTINGS**

#### **5.1 Vetiver and Bamboo: Sustainable Reforestation and Watershed Management**

Bamboo, like vetiver is a grass and a very powerful conservation and reforestation tool that can provide multiple benefits to rural mountain communities. Recently, the Environmental Bamboo Foundation’s (EBF) President, Linda Garland, donated various bamboo seedlings to plant on some of the driest and most barren slopes of Desa Ban, requiring vetiver half circles to be established first to prevent the young bamboos being lost by rain or wind erosion. One of the key goals of the vetiver/bamboo combination is water conservation and hopefully new springs emanating on hillsides due to vetiver and bamboo’s water retention properties.

**Table 3 Vetiver Dissemination Processes Methods & Media 2000-2006**

NO	DISSEMINATION METHODS	YEAR 2000+						
		0	1	2	3	4	5	6
<b>A</b>	<b>EBPP Direct Initiatives ( in chronological order)</b>							
1	<b>Bali Advertiser:</b> bi-weekly free advertising: Readership 50,000+							
2	<b>EBPP homepage</b> ( <a href="http://www.eastbalipovertyproject.org">www.eastbalipovertyproject.org</a> )							
3	<b>Bali Vetiver Conference, 31/5/00</b>							
4	<b>Radisson Hotel Fundraiser 8-2000</b>							
5	<b>“Café Bunga”</b> Charity Café and Vetiver information centre founded by EBPP & closed due to tourist road diversion		-	-				
6	<b>“SUSTENANCE”</b> , EBPP’s monthly newsletter, sent to over 1,300 addresses in over 30 countries		-	-	-	-	-	-
7	<b>Vetiver Training</b> for Schools by EBPP vetiver team							
8	<b>Vetiver Training</b> for Rural Farmers							
9	EBPP-designed <b>Vetiver promotional flyer</b>							
10	“Vetiver Grass – a Hedge Against Erosion” Indonesian translation							
11	Vetiver training video by Sarah Mathews & Brock Initiative (UK)							
12	Vetiver training CD-ROM for Vetiver Training Workshop							
13	Vetiver Training for Professionals							
14	Indonesian Vetiver Network (IDVN) Homepage							
<b>B</b>	<b>Word of Mouth</b>							
15	<i>The Domino Effect</i>							
<b>C</b>	<b>Balinese Charity Sponsored Bazaars and Events</b>							
16	EBPP stalls at bazaars and events							
<b>D</b>	<b>Media Exposure</b>							
17	The Jakarta Post (the only English language newspaper in Indonesia) articles		-	-	-	-		
18	Popular, free tourism magazine articles							
19	Britcham Update (British Chamber of Commerce) – monthly newsletters			-	-	-	-	-
20	Salam Magazine (local sustainable agricultural magazine, published by VECO, a Belgian NGO)					-	-	-
21	International Airline Magazine articles							
<b>E</b>	<b>Other Internet Publicity</b>							
22	Bali Update (weekly online newsletter for expats)							
23	Dutch Donors community websites in Dutch language							
<b>F</b>	<b>Partnerships with Bali-based Sustainable Community and environmental Development Organisations</b>							
24	<b>Bali Organic Association</b> – combining vetiver with organic worm fertiliser to optimise sustainable nutrition development.		-	-	-	-	-	-
25	<b>Environmental Bamboo Foundation</b> – combining vetiver with bamboo for community benefit and environmental sustainability						-	-
<b>G</b>	<b>Support from The Vetiver Network</b>							
26	Provision of “Vetiver Grass – a Hedge Against Erosion”							
27	“Vetiver Grass – a Thin Line Against Erosion”							
28	Vetiver International information & examples on CD-ROM							
29	Vetiver Network homepage							

## 5.2 Organic Worm Fertiliser Partners with Vetiver to Optimize Growth Potential

Organic worm fertiliser was promoted to the Vetiver Training Workshop participants as a sustainable and very powerful organic fertiliser for rural farming communities, only requiring cow dung, leaves, water and care to produce nutritious plant food, where each kg of worms produces around 15kg of castings/month!

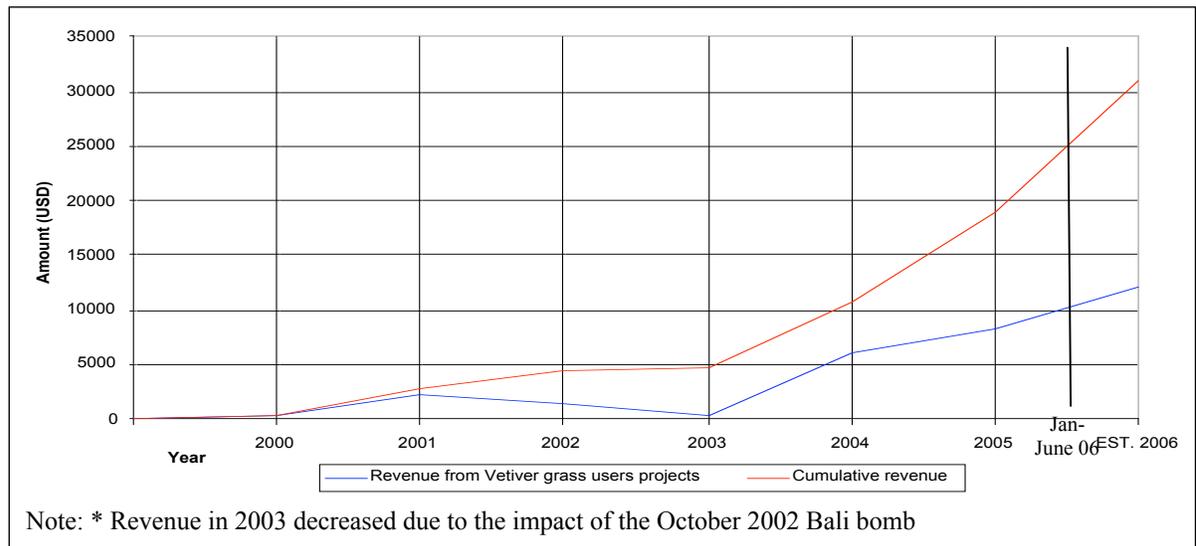
EBPP use worm castings for vetiver systems (a) when planting vetiver in critical areas needing rapid growth, and (b) as a plant food for vetiver slips that must thrive for long periods between harvesting and planting. A great example was vetiver we sent to a USAID project in Malang recently, where after 48 hours in a bath of castings and water, most slips had new shoots sprouting up to 3cm long!

We have designed a brochure in Indonesian giving a step-by-step procedure for starting and managing a successful worm farm with many simple illustrations.

## 6 VETIVER ACHIEVEMENTS BY EFFECTIVE DISSEMINATION 2000 - 2006

### 6.1 Successful Vetiver Dissemination Revenues Sustain Vetiver Development

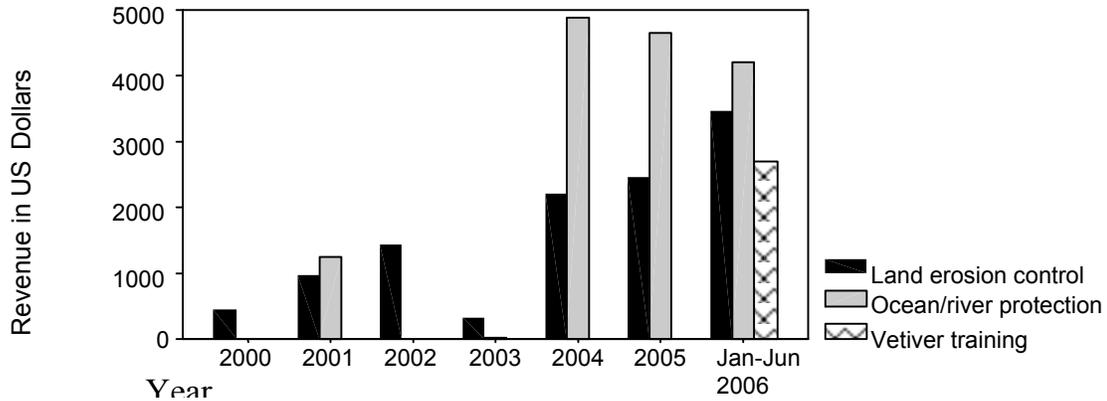
EBPP's successful vetiver dissemination since 2000, listed in Table 3, has resulted in a wide range of enquiries by email, telephone, letter and direct walk-in visitors seeking advice and vetiver planting projects for problems from land erosion control for hotels and private properties, ocean and river protection and as a bio engineering tool for stabilising road verges.



### Graph 1 Revenue from Vetiver Sales 2000-2006

Graph 1 shows the revenue from vetiver project design, consultancy and implementation and graph 2 details the project types.

All revenues from vetiver projects directly support East Bali Poverty Project activities, helping disadvantaged children and communities to help themselves



**Graph 2 Type of Vetiver User from 2000-2006**

## 7 FUTURE PLANS FOR EXPANDING VETIVER USE IN INDONESIA

### 7.1 The Indonesian Vetiver Network (IDVN)

The EBPP recently received a grant from The Vetiver Network to help facilitate better information dissemination throughout Indonesia in accordance with the following agreement:

*“IDVN and the Ekoturin Foundation is fully committed to providing Vetiver Systems support to the peoples of Indonesia and will endeavor to train farmers and other interested users in the technology in all the related areas of its application. These include: soil and water conservation in the forestry and agricultural sectors; earth work stabilization in the engineering and construction sector; bio-remediation for the reclamation of polluted areas; water quality improvement; handicrafts and any other use that may be applicable to communities in Indonesia.”*

To accord with these goals, since the end of May 2006, EBPP has translated and printed 2000 copies of “Vetiver Grass – A Hedge Against Erosion” in Indonesian and established a dedicated website for the Indonesian Vetiver Network which is still under construction and should be on line before the end of August and be available in both English and Indonesian. In addition, *Sustenance*, EBPP’s monthly newsletter, has been translated to Indonesian and will be sent out to all Indonesian Government departments that have a need for vetiver, universities, and consultants in all of the fields mentioned above.

### 7.2 Disseminating Vetiver to Relevant Indonesian Government Ministries

Across the Indonesian archipelago, there are many landslides triggered every year, particularly with the rainy season following a dry spell. Several of these are serious with significant loss of life and damage to property and crops. Lack of financial resources leads to slow and sometimes no proper recovery, with both the landscape and people affected, scarred permanently.

The EBPP has demonstrated clearly within its own project and with outreaching to other stability problems within Bali and neighbouring areas that vetiver grass has a very considerable part to play in preventing future slips and erosion while providing a ‘green’ solution. It recognises that there is an urgent need to disseminate its findings more widely. In Indonesia, this is best done through appropriate government departments and this was started in May of this year through a vetiver training workshop to specialists from the Indonesian Government’s forestry rehabilitation division, PT Perum Perhutani. Plans are now well

advanced to undertake a larger presentation to the Ministry of Public Works at the highest level, so that the importance of the use of and subsequent application can be included in their nationwide planning for the operations and maintenance of the country's infrastructure, particularly in roads. With over 30 provinces and 300 regional governments to cover, the dissemination process will extend for many months to come!

In order to respond to the anticipated demand for both disseminating the know-how on how to use vetiver properly and efficiently, and for responding to demand for the product itself, EBPP recognises that it now has to address the commercial issue of how this should be done best, i.e. expanding the application without impacting on the core objectives of the poverty project itself.

## 8 CONCLUSION

There are many barriers to getting vetiver grass fully understood and accepted in Indonesia as anything other than a source of income from sales of vetiver oil and roots for handicrafts. However, if vetiver is sensitively introduced as a solution to either prevent erosion, stabilise fragile roads and the like, in the kind of language the potential beneficiaries can understand *and* backed up by examples, it can clearly play a major role in poverty alleviation and opening futures for millions of families as evidenced in Desa Ban since mid 2000.

The East Bali Poverty Project's approach to getting acceptance of vetiver by a community of thousands who only knew their mountain environment and the grasses essential to their lives, succeeded because it was sensitively disseminated as a solution that they would own and could transform their lives in many ways. Children played the leading role in learning vetiver technology and systems, realising that they were empowered by their parents to lead their communities to a future of self-reliance and sustainable social and economic development.

Regular photo documentation of every stage of vetiver development in Desa Ban, often reported in EBPP's monthly electronic newsletters going out to 1,300 recipients worldwide, strategically placed PR and announcements of vetiver's "power", has resulted in thousands of enquiries since 2000 and hundreds of new vetiver users, many of which have been recommended by "satisfied customers".

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**A brief introduction to the first author:** David Booth, a civil engineer with over 20 years experience on a wide range of construction projects in many developing countries, moved to Bali in 1993 and used his international experience to give something back to the people of Indonesia. He established the Ekoturin Foundation in 1998 after identifying the most impoverished communities in mountainous East Bali. In recognition of his success in sustainable poverty alleviation for these mountain communities, he was awarded the MBE (Member of The Order of The British Empire) for "Services to sustainable development in rural East Bali, Indonesia" in Queen Elizabeth II's Birthday Honours List in 2004.