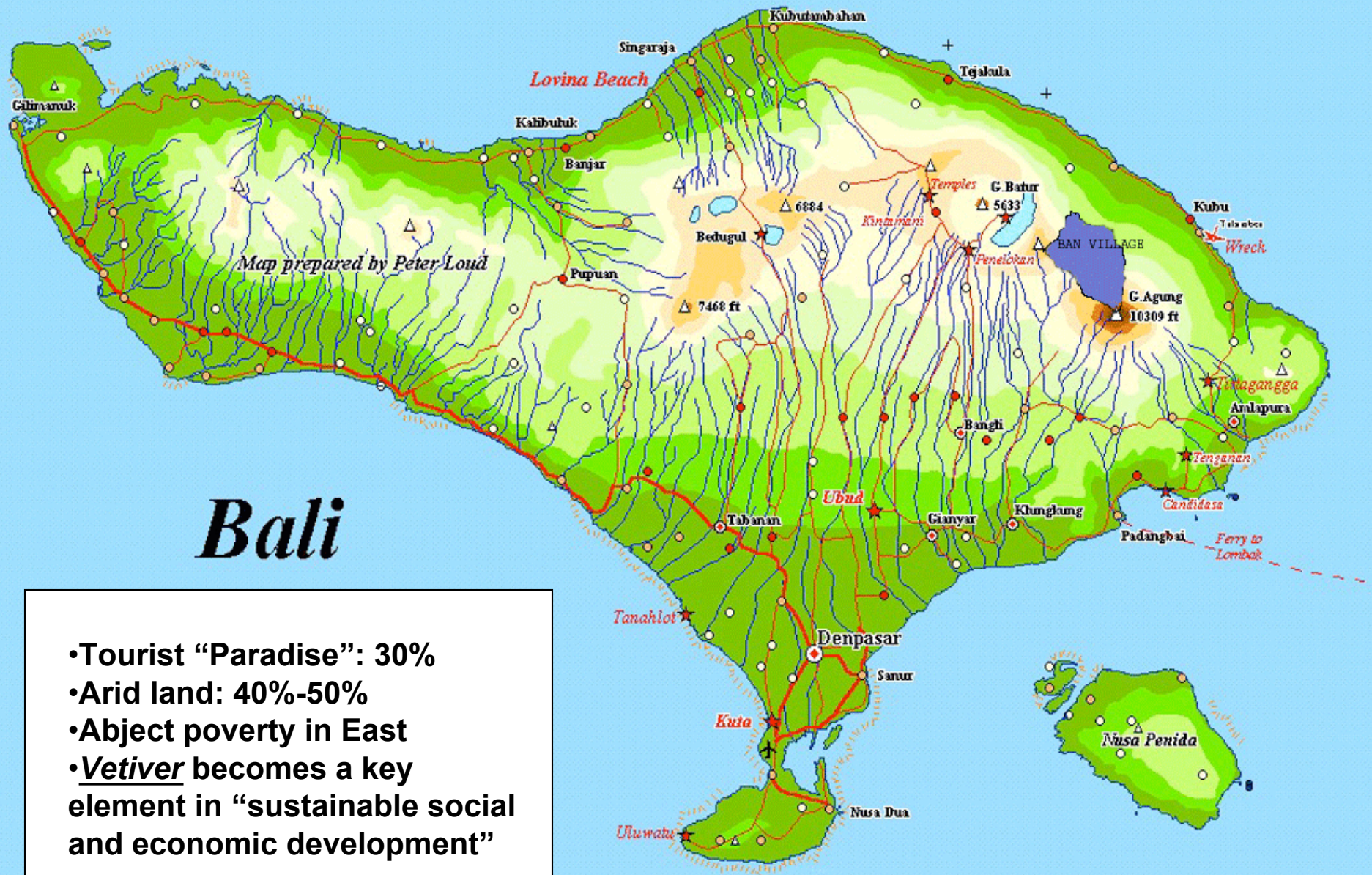




**VETIVER IMPROVING LIVES OF IMPOVERISHED
INDONESIAN SUBSISTENCE FARMING MOUNTAIN
COMMUNITIES, LED BY CHILDREN**

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Bali

- Tourist “Paradise”: 30%
- Arid land: 40%-50%
- Abject poverty in East
- Vetiver becomes a key element in “sustainable social and economic development”

EAST BALI POVERTY PROJECT



Established in 1998

**Helping impoverished children & communities
to help themselves and create a better future
for present and following generations**

Mission and Vision

- **To empower illiterate and malnourished children through relevant education, improved nutrition and basic ‘stay healthy’ principles through a process of “*see by example and learn by doing*”**
- **To reduce poverty and promote culturally sensitive sustainable social and economic development in impoverished rural communities that have little or no choice to alleviate their own plight**

The barren east Bali mountain slopes



Cegi and Pengalusan hamlets at elevation of 1,100m on Mount Agung slopes

Summary: EBPP Challenges in 1998 & Sustainable Solutions Applied since 2000: Benefiting over 2,500 Families in Desa Ban

No	Main Community Problems in 1998	Sustainable Changes by 2005, with <u>VETIVER</u> as the Direct or Indirect Key
1	Highway infrastructure & public transport: <i>None!</i> Only steep, sandy and highly erosive mountain tracks within the village. No vehicles of any kind in hamlets above 700 metres elevation. Walking is the only choice for most.	Over 20km of dirt roads improved with full community participation many with concrete tracks using exiting sand and erosive verges protected with Vetiver: allows 2,500 families to travel to markets, health centres, neighbours etc.
2	Illiteracy 75-100% in upper regions of Mounts Agung & Abang & 50% overall	More than 600 children educated in EBPP's schools since 1999: 97 graduated primary school: 80 now in EBPP Junior high school
3	Diet inadequate: Cassava & corn as staples – no nutritious vegetables, fish or iodised salt in local market; community don't know they have problems as have never left village	Nutritious org. vegetables now grown in EBPP schools, community gardens and kitchen gardens; all 2,500 families can travel to well stocked markets on improved dirt roads
4	Severe Malnutrition & Micronutrient Deficiency:	Monthly nutrition status checks show malnutrition almost eliminated
5	Child mortality: 25% before one year old (EBPP survey 2000-2001) – key causes: weak at birth, micronutrient deficiencies and polluted water	Child Mortality now 0.0007% from 0-5 years old! . Micronutrients provided by EBPP in partnership with Govt. Health Dept; safe water education progs ensure all children & families use good water hygiene
6	Iodine Deficiency Disorders (IDD): Palpable goitre in children aged 6-12: 84.5% in 1998 shown by Government Health Department survey	Only 20% of children had palpable goitre in August 2005 in Government Health Department survey – much lower than the national average.
7	Water supply: <i>None!</i> 2-3 hours average walk to mountain springs, many polluted; most get from household rainwater storage with high E-coli bacteria	Over 1,300 families now have safe water supply from remote springs piped to community reservoirs; over 300 household rainwater reservoirs protected; EBPP water education progs
8	No Local Health facilities: 85% have never seen a doctor and very few babies born with midwife help. Most children never vaccinated. No way for sick people to seek help as no transport & no roads	Health facilities for all 2,500 families since EBPP initiated 21 <i>Posyandu</i> (monthly hamlet-based health posts) in 2003. EBPP transport Govt Health team each month. Over 2,400 mothers & infants attend as well as other sick community members

EXAMPLES OF PROBLEMS IN 1998-9 FOR THE 2,500 FAMILIES IN DESA BAN

The following photos show some of the severe effects of isolation, lack of access to basic facilities, especially good markets and health centre, AND ALSO the problems of lack of access to knowledge and information due to isolation from the outside world, children being main victims

GOITER: IDD & SHORT LIFE SPAN



CRETINISM IN PENGALUSAN HAMLET 1999: ACUTE IDD – CANNOT HEAR OR SPEAK; NEED CONSTANT HELP



Stunted growth caused by IDD: One non-IDD man!

NO SAFE WATER- ONLY POLLUTED SPRING WATER FOR 400 FAMILIES



Water trickles from undeveloped small spring through Bamboo pipe into uncovered Vat totally green with algae & 000's of E-coli bacteria. Only source for over 400 families after 2-3 hours walk



Acute Impetigo (infectious bacterial skin disease) affecting 90% of children in 1998-9. Caused by lack of bathing, polluted water and TOTAL lack of nutrition to fight the bacteria.

**VETIVER FACILITATES ESSENTIAL
INFRASTRUCTURE OPENING UP THE
OUTSIDE WORLD FOR AN ISOLATED
COMMUNITY OF 11,500+ PEOPLE.**

**The following slides give examples of
how *East Bali Poverty Project*, in
partnership with the people, used
vetiver to create model and replicable
poverty alleviation programmes**

First generation to get a school education and pioneer change in their region, helped by EBPP



Cegi kids, 1999, before they had a school



Same kids graduate primary school 2004



2nd intake Pengalusan kids 2002 in temp. school



Pengalusan graduates, 2004, at new school

Vetiver protected dirt roads open the door to the future for thousands



Road to Cegi hamlet: concrete & Vetiver



Lush Vetiver borders inter hamlet track



New vetiver at Cegi – pickup in background



Newly opened road - community plant Vetiver

Jatituhu

Vetiver stabilizes volcanic sand fill for Cegi school building



Bali Hindu Priest blessing Cegi community land in January 2004 prior to leveling out the hill leading down to Cegi children's organic vegetable garden. The community did not believe that the cut sand from the brow of the hill could form the school foundation as fill as there was no clay or other cohesion in the sand. Vetiver came to the rescue! The power of vetiver in this testing situation sent a clear message throughout the region: "Got a land stabilization problem? No problem *If you use vetiver!*"



Newly completed Cegi school in June, 2004



Vetiver at boundary now higher than surrounds!

Vetiver stabilizing drainage channel and rear of school



Stepped vetiver to prevent erosion where land drops rapidly - 2004



December 2005: Vetiver Has held the land and even collected wind-blown rubbish!



Rear of school has done magnificent job!

Mountain homes made safer & greener with Vetiver



Vetiver borders on steep volcanic sand slopes enable children to develop organic vegetable school gardens



**Bunga Community organic vegetable learning garden -
notice the vetiver borders!**



June 2004 Carrot harvest in Bunga (see Vetiver training video)

Vetiver's role in success of community organic vegetable learning gardens (1)



Vetiver's role in success of community organic vegetable learning gardens (2)



Vetiver stars in: Individual organic vegetable kitchen gardens



Mountain community Vetiver nurseries on land too steep for crops



Vetiver prevents destruction of essential mountain springs

1. Total erosion after 2004 torrential rains & flash floods



Vetiver prevents destruction of essential mountain springs

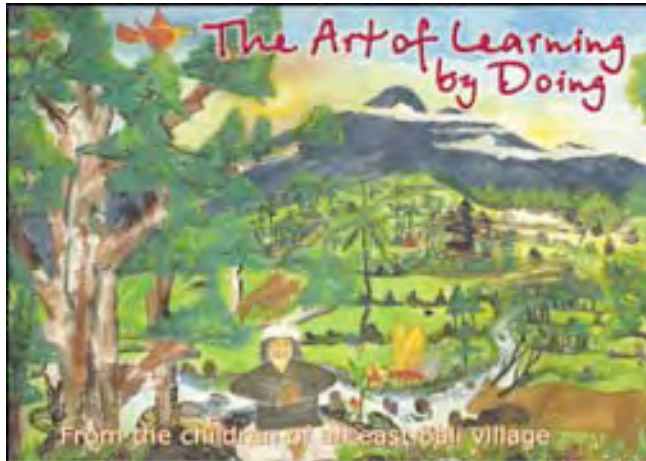
2. Vetiver planted after excavation and contoured backfill



Vetiver prevents destruction of essential mountain springs
3. Vetiver flourishes and saves the mountain spring for the future of thousands of people, especially the hundreds of young children who depend on a safe water supply for a healthy future



Vetiver in children's art & "The Art of Learning by Doing", illustrates the transformation of the previously isolated mountain community of Desa Ban, led by the children, with vetiver as one of the key solutions opening their lives for the future



Front cover



Desa Ban - Jangki, Bali



Vetiver in children's art & “The Art of Learning by Doing”, the book of their lives



Learning in the Field Class - Indonesia & Maria Ryan



Planting - Maria



EBPP Vetiver Training Video



Sarah filming village head explaining the power of Vetiver



Sarah records Bunga's Kartawa telling how Vetiver has changed his community forever – opening a future

Vetiver Planting Competition on seriously steep slopes:

A competitive event in EBPP's annual Indonesian Independence Day celebrations, designed to challenge children, parents and communities to prove who is best at what they have learnt for their newly empowered future. Teams of 5 kids and Dads compete to prepare, plant and water vetiver. Points given for accuracy in preparing, planting & watering



Cutting the Vetiver grass & roots to correct length



Planting on the 40 degree slopes in soft sand!



Finished with a wobble!



The final judgement

EBPP's Ardika training farmers groups and school children in other disadvantaged rural villages how to benefit from Vetiver



Vetiver posters are a very powerful visual aid



Explaining simple hand measure for slip & root length



North Bali junior high school children listen.....



and practice what they learnt on barren school land

EBPP Vetiver training for Lake Batur farmers

Lake Batur is Bali's most sacred and important lake. The water has become extremely polluted from land erosion after chopping trees for firewood, harvesting total bamboo clumps for Balinese ceremonies trickling chemical fertilizers & pesticides. The "Life Skills" workshop introduced organic worm farming for healthy plant fertilisers and the benefits of vetiver for stopping land erosion and protecting the lake shore from further pollution.



Ardika explaining the benefits of Vetiver with poster



Lake Batur farmers listen intently – prior to field training

Boreh: Medicinal powder from Vetiver roots



The Vetiver roots are ground to a powder, mixed with rice flour and rolled into cakes which are sun-dried – then ground to a powder before use



Nyoman Loka, one of EBPP's infrastructure team, shows off his 10 month-old baby boy who benefits from *Boreh* treatment every single evening before bed

EBPP Key Achievements: 1999 – September 2005

THANKS TO THE POWER OF VETIVER - STABILIZING ROADS & STEEP & SANDY SLOPES

WHERE: ALL 19 HAMLETS OF DESA BAN, BALI, INDONESIA
BENEFICIARIES: 2,500 FAMILIES OR 11,500 PEOPLE

SUSTAINABLE DEVELOPMENT FOUNDATION PROGRAMMES

KEY DONORS

1. EDUCATION: Integrated & relevant for previously illiterate children of illiterate parents

- 500 children educated; 97 graduated primary school
- 81 children now in EBPP Junior high school from 1st to 3rd grade in 4 hamlets
- Creative art skills: see EBPP book “**The Art of Learning by Doing**”
- School meals: each child gets daily nutritious meal PLUS milk & vitamins
- School buildings: 4, which EBPP call “Community Learning & Development Centres” as they are also for community vocational training & libraries
- Senior high school graduates: scholarship to boarding school for 5 girls & 2 boys from 1999 – 2005

BALI DYNASTY RESORT,
ANNIKA LINDEN FOUND.
(UK)
METTA FOUNDATION
(USA)
DANU ENTERPRISES
(USA)

2. DIRT ROAD IMPROVEMENT:

- 21 kilometres throughout the 7,200 Ha village, *benefiting 2,500 families*

Many

3. MICRONUTRIENT SUPPLEMENTS – ALL CHILDREN & MOTHERS PREVIOUSLY HAD IODINE & VITAMIN A DEFICIENCIES

3.1 Iodine deficiency elimination: supplements provided annually

- 2,000 mothers & 3,000 children

UNICEF

3.2 Vitamin A supplements: provided annually

- 1,200 infants and their mothers

UNICEF

<p>4. COMMUNITY HEALTH</p> <p>4.1 Initiated 21 <i>Posyandu</i> (monthly community health posts) with local kaders:</p> <ul style="list-style-type: none"> • 1,000 mothers & 1,300 infants 0-5 benefit <p>4.2 Primary health education for mothers & babies:</p> <ul style="list-style-type: none"> • All 2,500 families in Desa Ban twice a year <p>4.3 Eye testing and remedial for the whole community by John Fawcett Foundation</p> <ul style="list-style-type: none"> • 1,500 children & 300 adults <p>4.4 Polio vaccinations: facilitated by EBPP team – 1st time in history</p> <ul style="list-style-type: none"> • 1,200 infants 0-5 yrs <p>4.5 Measles vaccination: facilitated by EBPP team – 1st time in history</p> <ul style="list-style-type: none"> • 121 children in 4 EBPP schools 	<p>UNICEF</p> <p>UNICEF & others</p> <p>EBPP & John Fawcett Foundation</p> <p>EBPP & Gov't Health Department</p>
<p>5. SAFE WATER SUPPLY & WATER EDUCATION PROGRAMMES:</p> <ul style="list-style-type: none"> • Safe water from mountain springs benefiting 1,300 families; Rainwater reservoirs now safe for 400 families. KEY RESULT: Child mortality virtually eliminated! 	<p>RWE Thames Water plc, UK</p>
<p>6. ORGANIC VEGETABLE FARMING: NUTRITION & EVENTUAL ECONOMIC BENEFIT</p> <ul style="list-style-type: none"> • All EBPP school children & 300 families in 5 hamlets who can now grow a wide range of vegetables & herbs for NUTRITIOUS daily meals – eventually able to sell the surplus 	<p>British Embassy Small Grant Scheme 2002-2005</p>
<p>7. VETIVER GRASS TO STOP EROSION, CONSERVE SOIL/WATER & FACILITATE ORGANIC FARMING & ECONOMIC DEVELOPMENT</p> <p>•Millions planted!</p>	<p>EBPP & advice from Int'l Vetiver Network experts</p>
<p><i>FUNDING: All of this achieved with only US\$600,000 from 300 donors, 90 above US\$500 90% of admin work was done by villagers. Admin costs were 15% of total budget</i></p>	

Conclusions:

VETIVER BECOMES AN INTEGRAL PART OF COMMUNITY LIFE

- Five years since first introducing vetiver systems to the communities of Desa Ban, the most impoverished and isolated village in Bali, as an integral element of a model programme, we decided to find out from a cross section of the whole community of 2,500 families what their general perception was of vetiver and what they used it for. Ardika and EBPP Vetiver Team interviewed many community leaders, farmers and children. Our biggest surprise was that hundreds of families have been using akar wangi (vetiver aromatic roots) for years without ever connecting it to the vetiver grass EBPP introduced for erosion control and soil/water conservation in 2000. More surprising was that Ardika's mother learnt the benefits of akar wangi in boreh (medicinal scrub) from her mother and grandmother and has been buying apit roots as long as she can remember, as well as selling them to other mothers in her small village store.

A photograph of a lush green field, possibly a rice paddy, with several people working in the background. The text "THANK YOU FOR LISTENING" is overlaid in large, bold, red capital letters across the center of the image. The background shows a dense line of trees and a clear sky.

**THANK YOU FOR
LISTENING**