

**VETIVER SYSTEM
APPLICATION AND EXTENSION
FOR RURAL DEVELOPMENT IN
THE MOUNTAINS OF SOUTHERN
CHINA**

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China Vetiver Network

1.

Introduction: VS development in China



Introduced into China by Mr. Dick Grimshaw in 1988



Workshop on vetiver planting technology by Agri. Ministry and Water Resource Ministry 1989



International Vetiver Workshop, Fuzhou 1997→Highway



International Conference on Vetiver Bio-Engineering Technology, Nanchang 1999



THE THIRD INTERNATIONAL CONFERENCE ON VETIVER 第三届国际香根草大会

VETIVER AND WATER



香根草与水

SPONSORS 主办单位:

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VETIVER NETWORK
香根草网络

GUANGZHOU, P.R. CHINA
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ORGANIZERS 承办单位:

GUANGDONG ACADEMY OF AGRICULTURAL SCIENCES 广东省农业科学院
SOUTH CHINA INSTITUTE OF BOTANY CHINESE ACADEMY OF SCIENCES 中国科学院华南植物研究所
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GUANGDONG MUNICIPAL SCIENCE & TECHNOLOGY AGENCY 广州市科学技术局



Vetiver can fully protect the slopes in just 100 days since planting





**Vetiver stabilized slope &
protected environment**

Vetiver for Han River bank protection



Railway constructed with silt was protected with vetiver in just 3 months since planting



Vetiver for city waste water treatment



Rubbish filling land



Important role of Private Sectors and individual person:

Since 1999 Nanchang Conference:

- 1. Actively involve in ALL sections (highway, railway, river bank, landfill) so long as VS can be used to earn profit.**
- 2. Enable VS sustainable, only can they!
(Not universities or research institutes!)**
- 3. Private companies established Provincial network, actively involving VS dissemination and extension.**

2.

Vetiver-based Agroforestry

for

-Erosion Control,

-High Quality Commercial Tree

Production, and

-Food Increase



Soil erosion in the Dabie Mountains

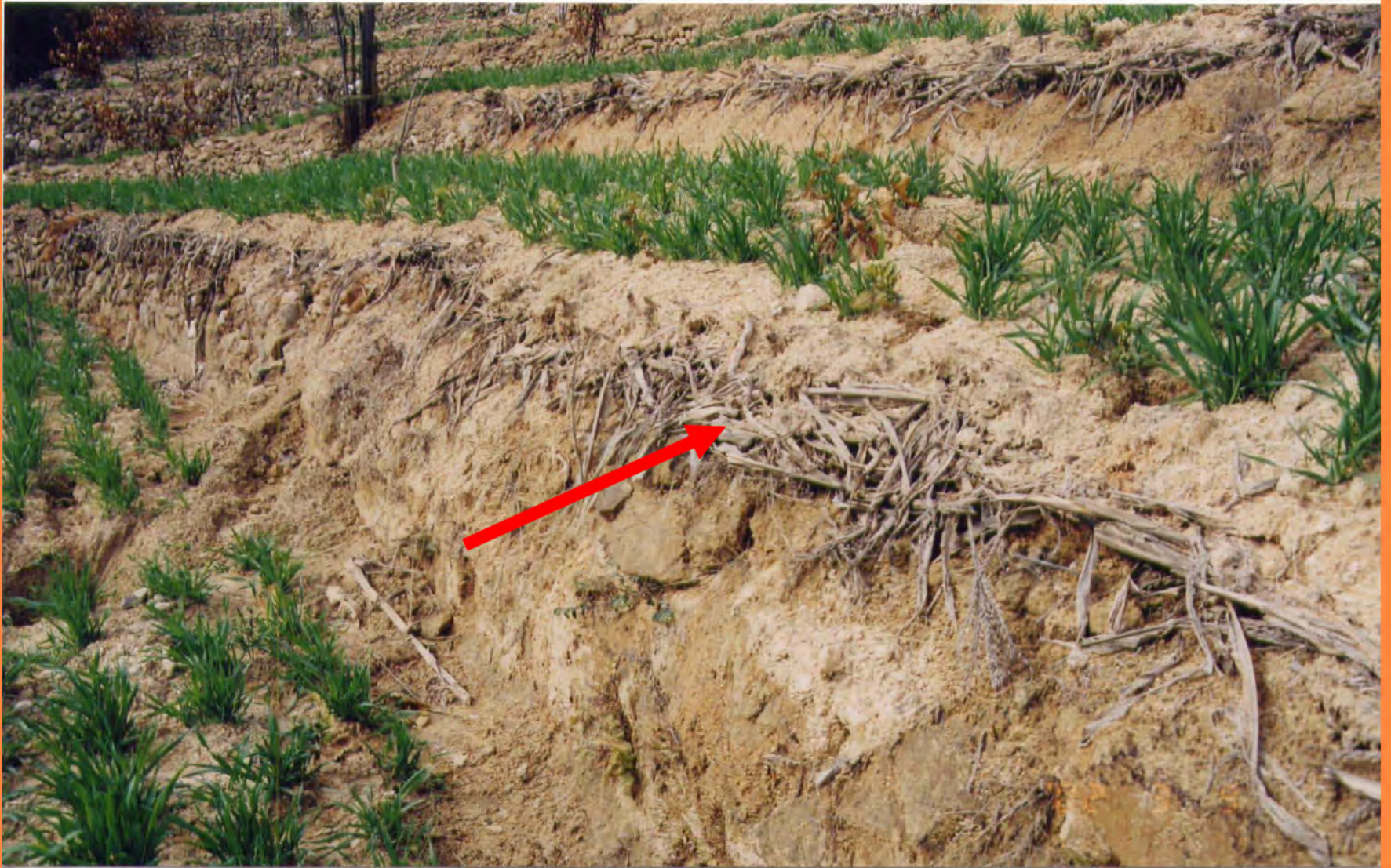


Problem:

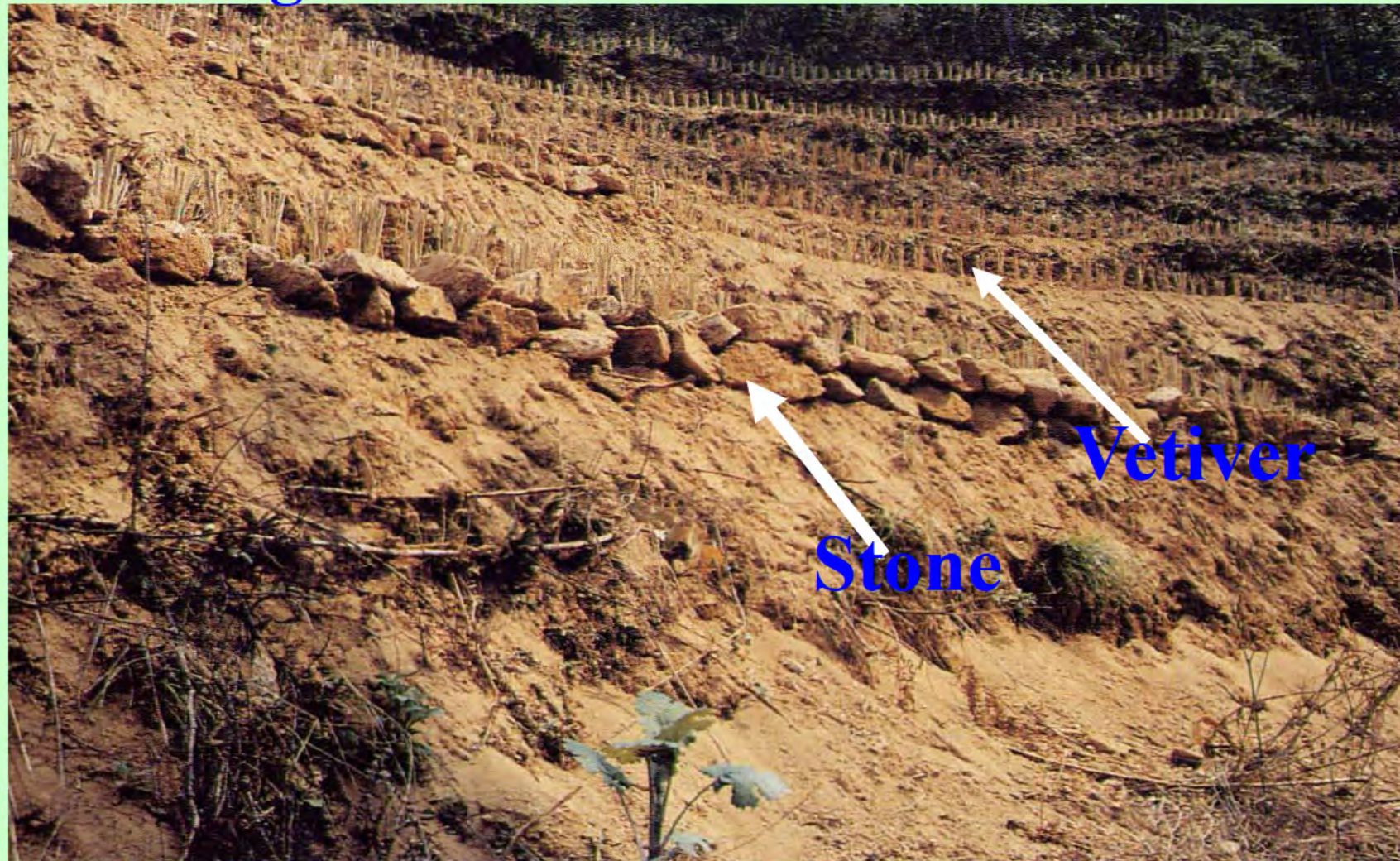
Large scale development caused serious erosion



Use dead plants to fix slopes



Using stone to fix terrace before, now using vetiver



Vetiver-based agroforestry projects (2007-2014)

Times	Project title	Commercial trees		Location of project
		Name	Area (Mu)	
2007,5- 2009,4	Vetiver and Agroforestry Technology for Rural Poverty Alleviation and Natural Resource Protection in Minority Mountains of Guangxi Province of China	Peach + plum	100	Batan Village, Sishui Township of Longshen County, Guangxi
		Pear	160	
		Loquat	180	Zhoujia Village, Sishui Township of Longshen County, Guangxi
		Peach + plum	100	
		Pear	140	
	Loquat	120		
2009,5- 2011,4	Vetiver Based Agroforestry for Poverty Alleviation and Soil Conservation in Dabie Mountains of China	Tea planting	100	Ganghe Village, Changpu Township of Yuexi County , Anhui Province
		Old tea reform	50	
		Bamboo	300	Shuifan Village, Changpu Township of Yuexi County , Anhui Province
		Tea	50	
2011,5- 2013,4	Rural development and environmental protection in the Dabie Mountains of China	Bamboo	100	Ganghe Village, Changpu Township of Yuexi County , Anhui Province
		Oil tea camellia	250	Daifan Village, Shuanghe Township of Jinzhai County, Anhui Province
2013,5- 2015,4	Rural development and soil erosion control in the Dabie Mountains of China	Bamboo	100	Zishi Village, Toutuo Township of Yuexi County, Anhui Province
		Tea planting	100	
		Old tea reform	100	
		Old tea reform	300	Daifan Village, Shuanghe Township of Jinzhai County, Anhui Province

Economic Trees:

**Peach, plum, Pear, Loquat, Tea, Bamboo
Oil tea (Camellia) , Old tea reform**

**Intercropped by food crops:
Corn, soybean**



VS for terrace fixing for economic trees





2006 9 19



Vetiver-maize-tea system

VS for rural road fixing



**Tea trees protected by vetiver grass in just 3 months
Tea quality improved**

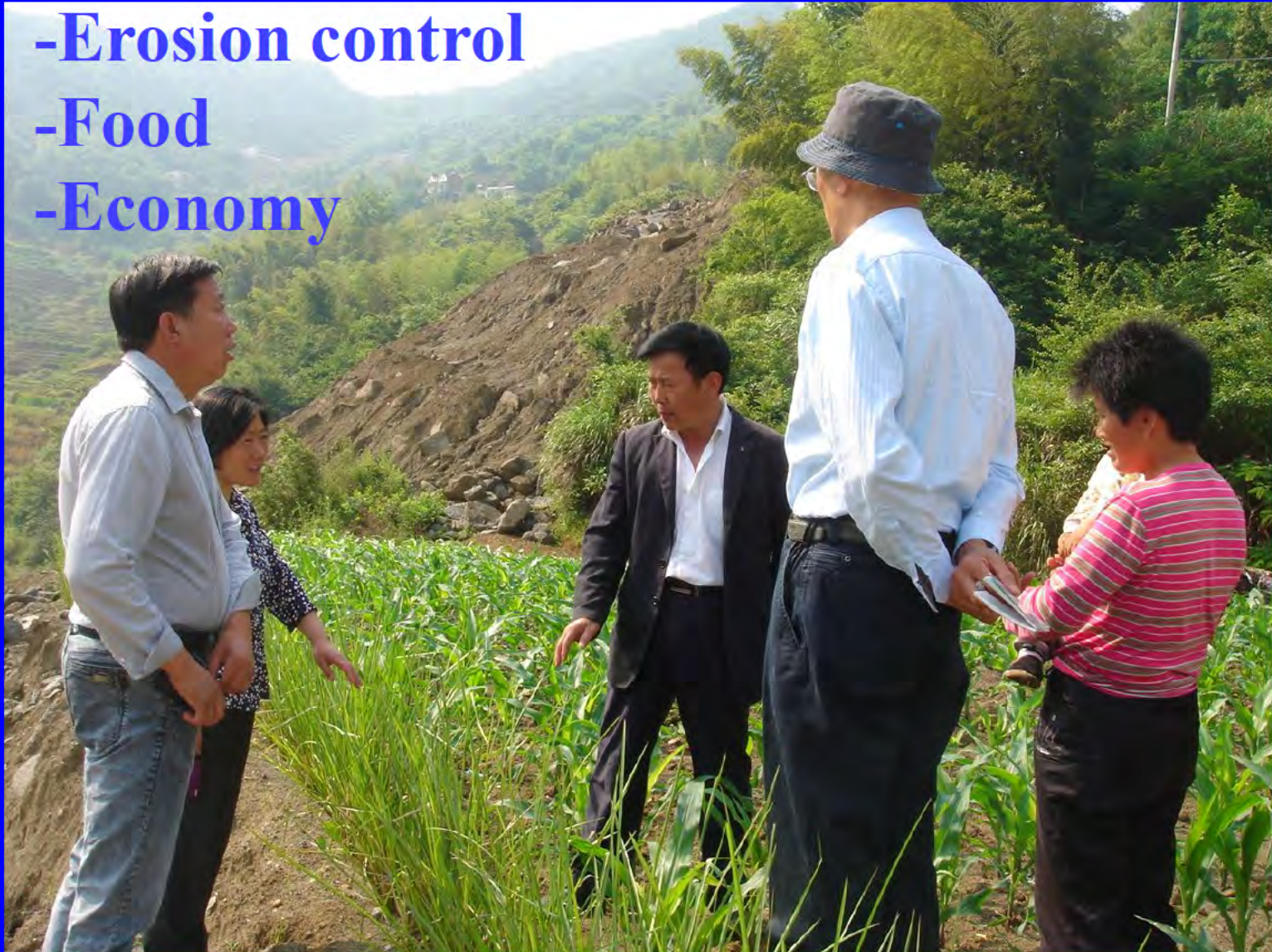


Chestnut tree protected by vetiver



Discussion on Vetiver-maize-tea system

- Erosion control
- Food
- Economy



Loquat intercropped with soybean





Tea plantation production (Changpu of Yuexi County)

Year	Production of fresh tea leaves (kg)	Production value of tea (Yuan/Mu)	Intercropped maize (kg/Mu)	Production value of maize (Yuan/Mu)	Total production value (Yuan/Mu)
2010			200	500	500
2011			200	500	500
2012			150	375	375
2013	60	2,000-3,000	0		2,500
2014	120 (estimated)	4,000-5,000	0		4,500
2015	150 (estimated)	5,000-6,000	0		5,500

The intercropped crops can promote tea growth





Small water pond for irrigation



Dam construction for rice irrigation



Install water pipes

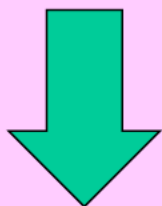




Discussion on project improvement

Main Project contents:

Vetiver hedges



Economic trees

Food crops intercropped

Animal raising

Irrigation and water conservation

3.

**Systematic Technical
Training and Extension**

(for

- project implementation and**
- VS extension)**



3.1 Content of training and extension

- **The characteristics and growth habits of vetiver, its role and efficiency on conserving water and soil, and the technology of reproduction;**
- **Multiple utilization of vetiver pruning.**
- **Reconstruction of eroded terrace and sloping land by VS;**
- **Agroforestry technology that can increase farmers income, enhance food security and prevent soil erosion;**
- **The importance of plant and crop diversity;**
- **The planting technology of nitrogen fixation trees, bushes and crops, which can improve soil fertility and realize sustainable agriculture;**
- **Contour planting technology;**
- **Planting and management of commercial trees (bamboo and tea in particular);**

3.2 Methods of training and extension

Regular training: Classroom lecture training combined with field practice.

Self-study: Plenty of training materials were produced for free distribution to enable farmers to do self-study. Experts and technicians were arranged to give field guidance.

Field visitation: Farmers are organized to visit nice demonstration plots and promote farmers to learn from each other.

3.3 Materials of training and extension

Training manuals

Newsletters (produced for 20 years since 1996 with 80 issues totaling over 24,000 copies)

Fact Sheets

Posters

Vetiver New Year's Greeting Cards:

Scientific books:

Vetiver Research and Development (1998)

Vetiver System and Its Research and Applications in China (2003)

The Theory and Practice of Vetiver System (2008)



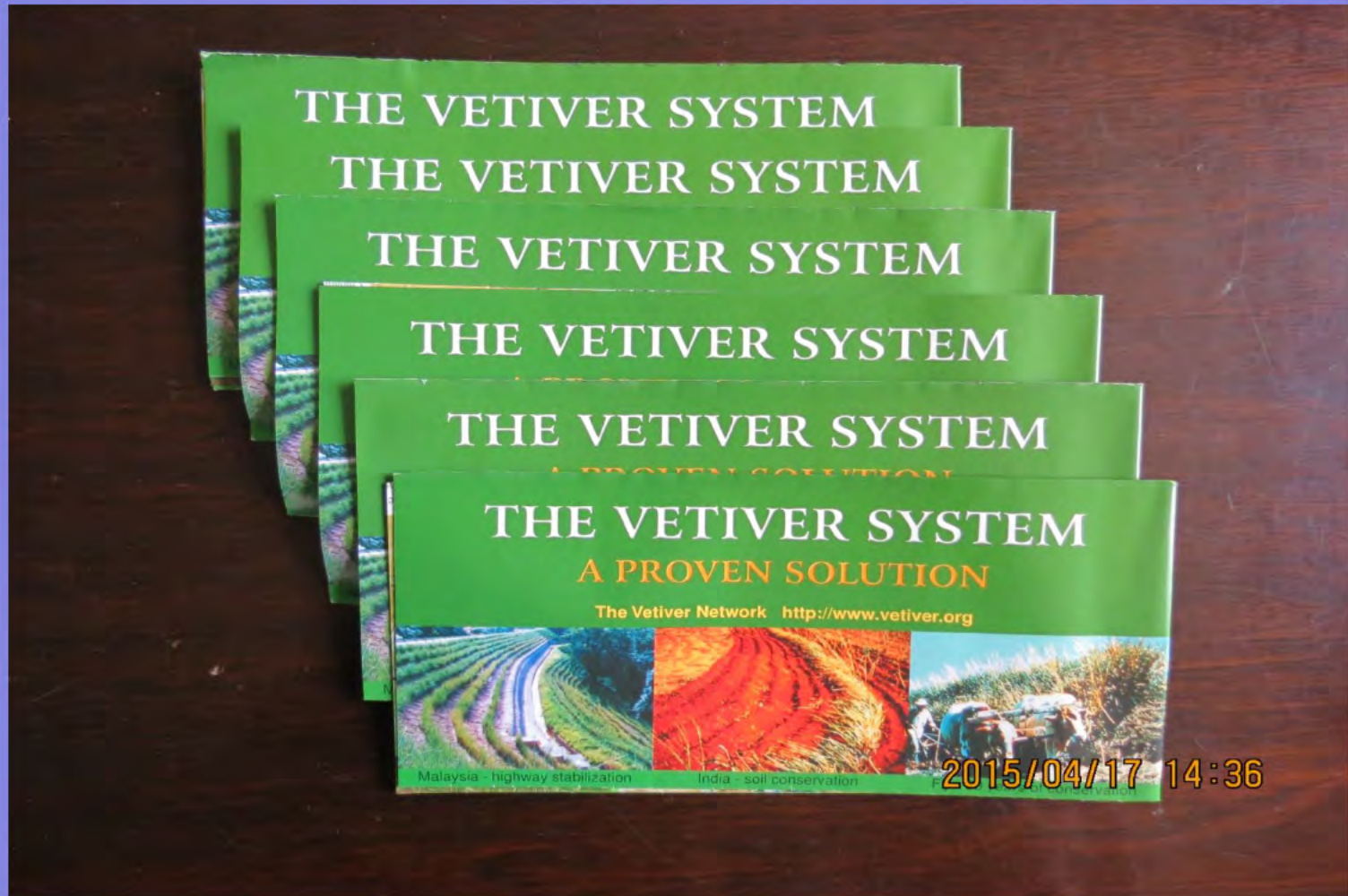
Booklets



Newsletters for **20** years since 1996



FACT Sheets



Posters from TVNI



New Year Cards



2015/04/17 15:22

Scientific books











2009 6 17

Hand to hand training for farmers in the Dabie Mountains



Lecture presentation by vetiver expert



Lecture on the use of vetiver for economic tree protection



Tea cultivation training



Wide distribution of vetiver printed matters to women







4.

Vetiver handicraft trainings

-to enhance women's social and economic position and

-to protect rural environment



Importance of vetiver handicraft

- **Help poor farmers increase income**
- **Encourage to plant more vetiver for erosion control**
- **Substitutes to replace plastic articles for farming and for family use to reduce plastic pollution.**
- **Good opportunity to exchange technical and social opinions and ideas.**
- **In some places women established their own organization to enhanced women's social and economic position.**
- **Can bring farmers a colorful life**

Vetiver handicraft training courses (2007-2013)

Number	Time	Location	No. of participants
No. 1	22 Oct.-3 Nov. 2007	Lipai, GX	25
No. 2*	28-30 April 2009	Maluo, GX	36
No. 3	22-28 Oct. 2009	Batan, GX	20
No. 4	29 Oct.-11 Nov. 2009	Zhoujia, GX	24
No. 5	16-29 Nov. 2009	Changpu, AH	22
No. 6	11-17 Oct. 2010	Shuifan, AH	20
No. 7	10-23 Oct. 2011	Dafan, AH	25
No. 8	24 Oct.-6 Nov. 2011	Ganghe, AH	20
No. 9	8-13 Oct. 2013	Dafan, AH	27
No. 10	16-29 Oct. 2013	Toutuo, AH	26

Types of the training course

- (1) Primary Training Course lasted for 10-14 days; and**
- (2) Advanced Training Course lasted for 6 days foster trainers.**

The content of the course:

- **Key presentations introducing the main procedures for vetiver handicraft production,**
- **Poster presentations on vetiver for soil erosion control,**
- **Exhibition of handicraft products from former trainings,**
- **Powerpoint and VCD performances,**
- **Hand to hand practice and group discussions,**
- **Exhibition and evaluation of trainees' handicraft products,**
- **Questionnaire and conclusion,**
- **Final evaluation and awarding to best trainees,**
- **Extended training by the trainees and thorough information distribution,**
- **Distribution of vetiver planting materials to trainees for the continuation of handicraft production.**

Problems in vetiver handicraft development:

- ◆ **Needs a little longer time to training.**
- ◆ **Little bit of support is needed to let participants initiate and develop the local market.**
- ◆ **longer time for farmers to get profit: to grasp skill, improve product quality, design and produce new products based on the local market, and then make products in large quantities.**
- ◆ **In poor and remote mountains the development is rather *fragile*, influenced by many factors. For instance, transportation facility**
- ◆ **The main products should be correctly selected and designed and should meet local culture or history.**

**No.1: Introduce vetiver handicraft technology
to China from Thailand**

Time: 22 Oct. -3 Nov. 2007

Location: Lipai, Guangxi Province of China



The three experts from Thailand



The opening ceremony



Awardees, trainers and organizers



Say good-bye to trainers

**No.2: Extend technology in Guangxi
Province by local government**

Time: 28-30 April 2009

Location: Maluo, Guangxi Province of China



The opening of the course

No.3: Improve skills and select trainers

Time: 22-28 Oct. 2009

Location: Batan, Guangxi Province of China



Minority girls learning to make vetiver handicrafts



The closing ceremony

**No.4: Extend vetiver handicraft technology
in Guangxi Province**

Time: 29 Oct.-11Nov. 2009

Location: Zhoujia, Guangxi Province of China



The opening of the training course



Group photo of the training course

**No.5 Introduce vetiver handicraft technology to
Anhui Province**

Time: 16-29 Nov. 2009

Location: Changpu, Anhui Province of China



Photo exhibition on vetiver system



The workshop site



Group photo of the training course

**No.6 Improve skills and foster trainers for
further trainings in Anhui Province**

Time: 11-17 Oct. 2010

Location: Shuifan, Anhui Province of China



The opening ceremony



Discussion on the revision of model



Distribution of multiple vetiver publications



Investigation on vetiver planting



The training course report on the TV

No.7 The first vetiver handicraft training course
in Jinzhai County of Anhui Province

Time: 10-23 Oct. 2011

**Location: Shuanghe, Jinzhai County, Anhui Province
of China**



Lecture on vetiver handicraft



Leaders from the Province and the County



The initiation of the handicraft

No.8 Introduce vetiver handicraft technology to Ganghe & Zhuangzhong villages in Changpu of Anhui Province

Time: 24 Oct.-6 Nov.2011

**Location: Ganghe Village, Yuexi County,
Anhui Province of China**



The opening ceremony

国际香根草手工编织第二期培训班



Preparing products for awarding

**No.9 The 2nd vetiver handicraft training
course in Jinzhai County**

Time: 8-14 Oct. 2013

**Location: : Shuanghe, Jinzhai County, Anhui
Province of China**



The opening ceremony



The workshop



The champion

**No.10 The 1st vetiver handicraft training
course in Toutuo Township of
Yuexi County**

Time: 15-29 Oct. 2013

**Location: Zishu Village of Toutuo Township, Yuexi
County, Anhui Province of China**



Lecture: the basic proceduralals



Listening very carefully



May I participate?



The workshop



All of the attendees



A hat to be finished



Part of the products



Visitor and vetiver handicraft products



Part of products



Part of products



The little model and new vetiver product



Part of the products



Multiple products produced



Part of the products



Product



Model and product



Initial products



Exhibition of the products







To beautify their room



Vetiver shopping





Competition & awarding

Certificates from TVNI







Market investigation



25/04/2010



25/04/2010

5 . Conclusion

Vetiver was found to be a miracle grass for use in agriculture since many years ago and should serve agriculture and farmers continuously. VBAF plus multiple trainings and extensions were proved to be an excellent measure for agricultural production and rural development, which cannot only reduce soil erosion, but also help farmers, get direct income and improve their social and economic position, protect rural environment and bring farmers a colorful life.



Future Consideration

A

**Support private companies and individuals
only way for VS sustainable**

A Normal Companies

B Family Companies

C Individuals (one person)

B



Encourage Provincial Network

C



Encourage farmers organization on VS

D

Promote regional, bi-lateral cooperation on

Agri.,

Environment,

Bio-energy,

Medicine and health care,

Planting materials

**Thank you
for your attention**

