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**Establishing family group and commune capacity to reduce  
storm vulnerability and economic loss, central Viet Nam**

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by **ALTERNATIVES & DEVELOPMENT WORKSHOP**

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**Final report**

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## 1. OVERVIEW

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### *The nature of the problem, its evolution during the project and the present situation*

Over the past decade, Viet Nam has been emerging from years of poverty. Economic reforms have had a largely positive effect on many families, whilst many activities are increasingly monetised. This growth and change is vital if families and the community are to achieve more stable and better living conditions. In turn, the improvement of family economies is vital for local and regional development.

But the often-tenuous improvement in family and commune conditions is frequently eradicated by the destruction caused by the annual round of storms, typhoons and flooding.

In effect, amongst the many changes in the past decade, a tangible change has been the increase in private expenditure in housing and small-scale rural infrastructure. Families have rebuilt a vast percentage of rural housing over recent years to replace previous thatch and bamboo houses.

Regrettably, this investment in new homes has not been matched by a parallel increase in their resistance to the effects of floods and storms. This weakness is largely because storm resistant building details have been neglected. On the narrow coastal plain of central Viet Nam, the greater investment in building paradoxically means that *vulnerability* to storms and typhoons has increased significantly because there is considerably more family and community investment at risk of loss in each disaster. On the basis of surveys we estimate that up to 70% of rural houses and facilities are at risk from damage in storms. And whilst it is difficult to provide protection against the massive "100 year" typhoons such as hit Viet Nam in 1985 and again in 1997, damage from the more frequent annual storms can and should be largely avoided.

Storm related disasters in central Viet Nam are an annual catastrophe with 4 or more typhoons hitting the coast each year, as well as more frequent less damaging storms and often severe flooding. The loss and damage to the home that results is a major set back to families and the community. Repairs and reconstruction seriously divert resources and capacity away from the potential for economic growth and development.

**This level of vulnerability is unnecessary. Preventive action to strengthen community and domestic buildings is an effective and cost efficient manner of reducing economic and material vulnerability, and families and communities can do it themselves.**

### *Comments*

This is an ongoing climatic and economic problem, where poverty reduction is strongly linked to the impact of disasters on vulnerable families. It is a problem that cannot be resolved in response to a single disaster event, but only as part of a long-term strategy of prevention.

### *Project*

This project constitutes a short term extension of the previous projects funded by CIDA /1999-2001<sup>1</sup> and Alternatives / FAVC ( Fondation d'Aide Viet Nam - Canada ) /2002<sup>2</sup>, and implemented in Viet Nam by Development Workshop.

All information about the context of the project can be read on these projects reports.

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<sup>1</sup> See "Assisting the development of popular capacity to prevent typhoon damage to housing in central Viet Nam - Final report", Alternatives and Development Workshop, March 2002, 40 p.

<sup>2</sup> See "Projet FACV - Activités Janvier - Mars 2002", Development Workshop, Avril 2002

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## 2. THE PROJECT

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### 2.1. Participants and Beneficiaries

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The project targets rural and peri-urban coastal populations in the central provinces of Viet Nam. The beneficiaries are poor and vulnerable families whose homes are at risk of storm damage, and are estimated to represent up to 70% of the population. Average family incomes are about 30\$ US/month (or less) against an average cost per m<sup>2</sup> of 20 - 30\$ for a typical 35 m<sup>2</sup> house.

The project has worked in 6 communes<sup>3</sup> of Thua Thien Hue Province with a total population of 60 000, and many of the project activities have reached out directly (animation) or indirectly (demonstration effect on individual buildings) to this overall population.

The project has transmitted a message to a larger population through TV reporting on its activities

Direct participants and beneficiaries have included the members of 65 families whose houses have been strengthened with the project.

The families were organised in "prevention" groups at the hamlet or village level.

In addition, the project has provided training to an average of 120 construction workers and 90 villages and communes cadres, and has established and trained and closely worked with 4 Commune Damage Prevention Committees (CDPC) whose members are largely drawn from the People's Committee of the communes, representatives of the women's and farmer's unions, and families group leaders.

The project has worked with the primary school population in each commune and 70 teachers have participated in training workshop to integrate the project theme into schools.

Commune kindergardens and some primary schools have been strengthened with project help. In general, although levels have varied in different communes, the animation activities have involved construction workers, village and community leaders, teachers, school children and their families (See Table of outputs 3.2).

42% of beneficiary families have been headed by women.

The project has worked with local counterpart staff drawn from the Construction Design Consulting company in Hué, and has collaborated with representatives of the People's committees of the province and the districts, as well as the Provincial Committee for Flood and Storm Prevention.

### 2.2. Duration

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The project duration was from June 2002 until the end of January 2003.

The project has operated during the foreseen period.

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<sup>3</sup> 4 communes of the project (Phu Da, Thuy Thanh, Quang Tho and Vinh Hai) and two "extra" communes, with short interventions (Quang Cong and Phu Thanh, see Annexes)

### 3. RESULTS

#### 3.1. Results toward the achievement of objectives

**Project Title** – Establishing family group and commune capacity to reduce storm vulnerability and economic loss. Thua Thien Hué Province, Central Viet Nam

**Project Goal:** To establish the social, institutional, financial and technical mechanisms to encourage and enable families to undertake preventive strengthening of their homes so as to avoid loss and damage in storms, and through this, achieve stability for future development

Resources	Objectives	Results
<p>CIDA-IHA 79 800 CAD</p> <p>Population &amp; Communes 7 800CAD</p>	<p>1. Establish mutual family support mechanisms for vulnerability reduction and support village level family damage prevention groups</p>	<ul style="list-style-type: none"> <li>• 10 Family 'prevention' groups operating</li> <li>• 65 houses strengthened with active participation of male and female beneficiaries in the project period</li> </ul>
	<p>2. Establish systems for the attribution and management of credit for house strengthening.</p>	<ul style="list-style-type: none"> <li>• Credit system established</li> <li>• 58 families initially helped with access to credit</li> <li>• Repayment : 90 % in time (10 % short delays due to loss of autumn harvest)</li> </ul>
	<p>3. To develop skills in the community for strengthening.</p>	<ul style="list-style-type: none"> <li>• 120 construction workers and 90 villages and communes cadres, and selected family members trained.</li> <li>• Skills developed in the community to support house strengthening work.</li> <li>• A technical advisory capacity developed in villages.</li> </ul>
	<p>4. To facilitate access by women headed families to support for undertaking damage prevention.</p>	<ul style="list-style-type: none"> <li>• 42% or more of beneficiary families are headed by women and undertake preventive strengthening</li> </ul>
	<p>5. Strengthen women's capacity to participate and express needs in the vulnerability reduction process.</p>	<ul style="list-style-type: none"> <li>• Improved expression of women's needs and concerns in vulnerability reduction</li> </ul>
	<p>6. Strengthen the role of children in awareness raising.</p>	<ul style="list-style-type: none"> <li>• 4 schools strengthened; one training session for 70 teachers</li> <li>• 4 parades by school children promoting the theme of damage prevention</li> </ul>
	<p>7. To develop the capacity of the Commune Damage prevention Committees to mobilise the population, and to provide sustainable financial, managerial and technical support to families and the community, and to organise commune level animation activities that promote prevention and vulnerability reduction.</p>	<ul style="list-style-type: none"> <li>• Improved capacity of 4 CDPC to deliver support, to manage prevention activities and to undertake mobilisation and animation in the communes</li> <li>• Campaign in each commune (loudspeakers, children parades, fetes in villages)</li> <li>• Support provided to villagers</li> </ul>
	<p>8. To promote the adoption of preventive strengthening strategies at higher decision making levels.</p>	<ul style="list-style-type: none"> <li>• Evaluation and proposal in a commune hit by whirlwind</li> <li>• Organisation of housing reinforcement for the Provincial day of Disaster Preparedness</li> <li>• Participation to national and international workshop</li> </ul>

### 3.2. Outputs

	Total	Note
<b>I/ Animation</b>		
<u>Communication</u>		
Banners	40	
Construction handbook on Cyclone resistant construction	300	
Cap	100	
Raincoat	200	
TV report	1	45' film on training
<u>Schools</u>		
Pupils parades	4	150 pupils in each commune
<u>Shows (songs, poems)</u>	3	On completion of works (families and public buildings)
<u>Monthly meeting Communes Damage Prevention Committees (CDPC)</u>	4	Monthly meetings in each commune
<b>II/ Training – exchange - dissemination</b>		
<u>In four main communes</u>		
Teachers	1	70 teachers
Builders	2	2 sessions; A total of 120 builders and 90 cadres
<u>In other Communes (2)</u>		
Quang Cong	1	25 cadres 125 families
Phu Thanh	1	75 cadres and workers
<u>At National &amp; International level</u>		
Workshop in Hanoi / ADPC, Ministry of construction, Red Cross	1	
Workshop in Bali / ADPC, UNDP, USAID	1	
<b>III/ Strengthening houses and public facilities</b>		
Credit groups	10	
Houses	60	
Public facilities	6	
Demonstration houses in Phu Thanh	5	On the occasion of the Provincial Preparedness day

## 4. IDENTIFICATION OF TARGET GROUPS AND RISK

### 4.1. Target groups who directly benefited from the project results

General	Specific	
	IDPs	X Children
	Refugees	X Youth
X	Victims of Natural Disasters	X Elderly
	Other	X Women

The principle target group has been poor and vulnerable families<sup>4</sup> in the coastal plains of central Viet Nam, who are regular victims of natural disasters. They are at risk from having their house destroyed or damaged, and their investment in building, building materials and possessions lost. *As a side note, the intimate link these communities have to farming and fishing makes the option of relocation an often-difficult one to implement successfully*<sup>5</sup>. For the majority, reducing people's vulnerability where they are is thus important.

More specifically, within the overall target group, the project has also worked with different groups within the communes.

- The project has worked with youth in the communes by providing practical training and discussion sessions on the issue of damage prevention and on the techniques that can be used by the building brigades that exist in each commune.
- The project has worked with many of the elderly, since this group are most often amongst the most vulnerable in the community and many of them have had their houses strengthened. Community elders and traditional leaders have been involved in debate in the villages during beneficiary selection processes and choices of public buildings in their village.
- The project has worked directly with women; 42% of the beneficiary households are headed by women, and women have been active in their villages in sharing their experience of the project intervention with their neighbours. The women's union is represented in the CDPC and helps in mobilisation.

### 4.2. Major risk factors and how they influenced the results.

In the Vietnamese context, the project has been innovative. It has promoted ideas that were originally considered with both scepticism and lack of sympathy :

- Firstly, the notions of 'village level animation' and that of the 'development of popular capacity' are still sensitive in Viet Nam;
- Secondly, in general terms, the idea of strengthening existing rural houses – considered by some senior officials to be weak and *unusable* – was sometimes not considered to be serious, nor a priority.
- Thirdly, the principle of a credit system for housing reinforcement (in combination with subsidy) was *a priori* rejected by some experts from CIDA<sup>6</sup>.

***These risks/difficulties did not affect the outcome of the project. It has been the aim and the challenge of the project to demonstrate that preventive strengthening is viable and that this can be encouraged through capacity development, animation, and credit system and this aim has been effectively achieved.***

<sup>4</sup> The poor are classified as those who cannot satisfy the bare necessities of life, and in 1998 were considered by the VN General Statistics Office to number 39% in South Central VN and 51% in North Central VN; a larger proportion are classified as « temporarily poor » meaning families whose income fluctuates above and below an acceptable minimum level – GSO VN 1999.

<sup>5</sup> Where relocation has been done by some projects, it is clear that family members travel back sometimes long distances to their previous home to work, and often continue to live there. Note based on DW discussions with relocated families in 2002  
<sup>6</sup> See "Working document / Alternatives- DW Project evaluation ", by Ms C. Gander, CIDA, 2002

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## 5. PERFORMANCE FACTORS

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### 5.1. Timeliness

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The programme has been initiated without any overall delays, although care in the use of project funds has enabled activities and support in the communes to continue for 2.5 months longer than originally planned.

### 5.2. Appropriateness

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Human resources and capacities have been sufficient to achieve the majority of intended results, as were the strategies that have been adopted.

The selected strategies have been suitable to achieve the intended result.

The local authorities (Province, City of Hue) recommended an extension of activities of the project (see Annex 7).

### 5.3. Cost-effectiveness, efficiency and effectiveness

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The project has been run in an efficient and effective manner.

The project has been organised to encourage the participation of all staff members in planning decisions: weekly meetings have been held throughout to plan and review; similarly monthly meetings have been established with the Commune Damage Prevention Committees for activity review and planning. Accounts have been promptly rendered to the implementing organisation on a monthly basis.

Practical targets for house strengthening have been met in a timely manner, and the project team has shown itself to be very efficient in organising commune and province level events. The project has developed a substantial database generated out of the field studies and monitoring of activities.

#### Cost-effectiveness

More has been achieved with the project budget than planned. For example, 65 houses strengthened instead of 55, in this first phase; a further 50 houses will be reinforced using the credit revolving fund.

6 public facilities have been strengthened instead of the 4 originally planned.

### 5.4. Co-ordination of activities with work of other groups in the area

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- i) The project has hosted visits by professionals from various organisations.
- ii) Participation to the national workshop: "Safe shelter in Viet Nam", organised in Hanoi by ADPC (Asian Disaster Preparedness Centre), Ministry of Construction, IFRC (International Federation of Red Cross Societies), with presentation of various components of the project (September 2002).
- iii) Invitation to the regional workshop "Best practices in disaster mitigation", organised in Bali by ADPC, UNDP, USAID (September 2002).

*One is nevertheless aware that there are different approaches to the issue of reducing vulnerability: the most prevalent being to build new houses or core houses for, and only sometimes with, families. Coordination and practical collaboration are not always easy to achieve, and there is room for improvement through the NGO networks and within the provinces. There are regional initiatives that are trying to do this, and the project and the implementing organisation are affiliated to these.*

### 5.5. Participation

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#### Beneficiaries' involvement in decision-making, design, delivery and or monitoring of the project.

Beneficiaries have been involved in decision-making and in the delivery of the project activities: commune representatives have been actively involved in decision-making, in activity design and in monitoring activities. The project has been based on community participation at a variety of levels (mainly within the family group and

village level).

## **6. MANAGEMENT PERFORMANCE FACTORS**

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### **6.1. Communications**

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The Canadian public will be informed, in both French and English, of project activities and CIDA's contribution through Alternatives' monthly newspapers (circulation approx. 150,000), its Web site (and affiliates One World-Canada, Centre de médias alternatifs, Forum mondial des alternatives), its direct mail appeals to 30,000 previous donors and 100,000 prospects annually across Canada, and its dev-ed activities in Quebec, conducted jointly with members of the local Canadian Vietnamese community through their organization Fonds d'aide Vietnam-Canada.

### **6.2. Innovation and creativity**

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#### ***Exploring and implementing new and innovative ideas or approaches to achieve its objectives.***

A variety of features of the project have been innovative and the project management have been active in exploring new ideas to achieve the project's objectives. Ideas that have been new in Viet Nam can be summarised as:

- that it is possible for families to reduce vulnerability by strengthening their existing buildings and that it is economically viable to do so;
- that dynamic and engaging animation activities in which the local population takes part contributes significantly to making people conscious of the message being delivered by the project and remembering it;
- that a well-adapted credit system is viable and affordable for families in the villages.

The staff and commune partners have maintained an ongoing discussion about ideas that can be used to advantage to help convey the project message, and this has generated considerable local engagement and pleasure.

### **6.3. Appropriate human resource utilisation**

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The project management assembled a local Vietnamese team of technicians and community animators, gave them training in all aspects of the project, and they have worked extremely well.

In parallel the project established Commune Damage Prevention Committees (CDPC) drawing on community representatives, provided these committees with training, and they have gone on to play an important part in community mobilisation, coordination and beneficiary support.

Training has been given to construction workers within the commune so that they know about storm resistant building techniques, and they have in turn provided practical help in the demonstration activities on small commune buildings and beneficiary houses.

Training has been given to teachers to help take the message into the schools.

### **6.4. Monitoring by different partners and beneficiaries**

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Monitoring has been at several levels, and both internal and external to the project.

- The overall project was monitored daily by the implementing partner Development Workshop through its project coordinator, and monitored through regular missions by DW Canada Director, John Norton;
- In the communes the project counterpart, the CDPC, has monitored activities that have taken place in their commune. The project has also been monitored by the People's Committee of the Province.
- Most important, the beneficiary families, who have signed participation agreements with the project, have monitored day-to-day work on the strengthening of their homes, as well as contributing to the work, and to the costs and design of what needed to be done.
- The project has been visited by professionals from ADPC, and Viet Nam Ministry of Construction



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## 7. LESSONS LEARNED

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### 7.1. Main lessons learned

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i) **Recognition of the prevention strategy at provincial and national level**

This present project in 2002 is part of 4 years work in central Viet Nam, which has demonstrated that :

- strengthening houses is viable technically, and represent a solution for the problem of cyclone and flood prevention;
- animation and training are part of an overall process of awareness raising on prevention;
- credit system (with subsidy support) is socially accepted and economically adapted to the families situation.

This strategy has been now recognised in Viet Nam, and is considered by local authorities and national technicians as a part of the disaster preparedness strategy, but establishing the project approach as part of official national strategy will take more time. Overall, considerable progress has been made in this area.

ii) **Key roles of families at hamlet / village level**

In this phase, the families have been selected at the level of individual hamlets, and organised into small family groups, who help manage credit and subsidies for strengthening. Given the important role that mutual aid plays within the village and neighbourhoods, developing family groups within the community to manage the preventive strengthening process, to spread information about how to participate and about what is involved, and to work with the Commune Damage Prevention Committees, is important to assure the future of the process.

iii) **Affordable credit for strengthening**

In the previous CIDA funded project run by Alternatives and DW, it has become clear that poorer families will turn to local moneylenders in order to engage in strengthening their home. Whilst this was a positive sign of commitment, it has also created pressure on some families because of high rates of interest exacted by informal lending.

**The credit system for housing reinforcement, set up by the project at commune level – combined with cash subsidy support - , represents real progress, and has already demonstrated that people repay short term affordable loans for house strengthening even though this does not have a direct connection to income generation. Families recognise that the safety of the houses and the reduction of vulnerability do represent a key component in economic security. They are prepared to pay for this.**

Future work needs to continue to demonstrate a credit system for those in most need, and needs through the example of the project to encourage other donors and banks to make credit available.

iv) **Demonstration and communication**

Demonstration work on private houses and small public infrastructure (schools) play an important role, but needs to be spread more widely through the community so that as many people as possible can see the results in different localities. In every case there needs to be clear information and advice explaining what a family can and should do whether supported by a project or not. Communication and animation activities equally need to be repeated frequently, using simple methods that can be sustained, so that people are aware of the need to take action.

v) **Popular Conscience**

The general opinion of local leaders is that the project has generated a profound change in people's awareness about preventing storm and typhoon damage, and not solely amongst people who have been

direct beneficiaries, but on a wider scale in the participating communes. This heightened awareness of the need to take prevention action - and of the possibility of doing so - has nevertheless been achieved through a long process of work in the communes with multiple actions and forms of support. One might imagine that this 'awareness' brings the need for preventive strengthening into competition with other family priorities. But on the contrary, it is very encouraging to see that families recognise that a stronger house helps stabilise their socio-economic environment and provides them with better security to develop other aspects of their lives. This has been particularly highlighted in external case studies on the project

## 7.2. Changes to operations

### *What changes in operations would you like to see based on these lessons?*

The project has been able to demonstrate a variety of ideas, and show that they work and are popularly and officially acceptable in the Central Viet Nam environment. The achievements of the project in this at times difficult environment are not inconsiderable. Nevertheless, the scale of the project has been small. The lessons of the project need to be taken forward and applied on a greater scale in order to have lasting impact and in order for the project strategy to be integrated into national and sub-regional strategy. To be sustained and to achieve a wider geographical and political impact requires sustained support. Funding over the past 18 months has come in the form of small grants that enable several months work to be undertaken at a time. To capitalise on the results so far, four to five year funding for a basic expanded programme is needed to which additional support can be attached, in particular in developing more secure sources of support for the house strengthening credit programme

## 8. FINANCIAL REPORTING

### 8.1. Statement of Income and Expenditures (in CaD)

Disbursement of CIDA funding has been 100%

Budget Line	Item	June 2002 - January 2003	
		Original Budget	Expenses
<b>1.</b>	<b>Local team</b>	<b>20 680</b>	<b>22 963</b>
1.1	Local team Hue	14 280	13 402
1.2	Operating costs	6 400	9 561
<b>2.</b>	<b>Activities</b>	<b>35 952</b>	<b>33 855</b>
2.1	Animation	4 000	2 571
2.2	Training	2 000	931
2.3	Housing	23 232	22 893
2.4	Public facilities	5 120	6 215
2.5	Prevention Committees	1 600	1 245
<b>Total 1-2</b>		<b>56 632</b>	<b>56 818</b>
<b>3.</b>	<b>Technical assistance</b>	<b>17 600</b>	<b>17 600</b>
<b>4.</b>	<b>Management</b>	<b>5 568</b>	<b>5 768</b>
<b>Total 3-4</b>		<b>23 168</b>	<b>23 368</b>
<b>Total</b>		<b>79 800</b>	<b>80 186</b>

DW has covered the budget difference. Adjustments in the budget have enabled activities to be prolonged the operation period to 7.5 months against the planned 5 month period, and this has helped maintain support to family groups in the communes.

### 8.2. Local fund raising

Households have contributed 1 600 US\$, and started to reimburse loans for 6 500 US\$. The People's Committee in 4 communes in Thua Thien Hué have contributed 3 300 US\$.

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## 9. ANNEXES

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<b>Annexe 1</b>	<b>Activity summary sheets</b>
<b>Annexe 2</b>	<b>Choice of beneficiaries and organisation of works</b>
<b>Annexe 3</b>	<b>Summary of demonstration work and costs</b>
<b>Annexe 4</b>	<b>Credit scheme - repayment</b>
<b>Annexe 5</b>	<b>Ten Key points of Storm resistant construction</b>
<b>Annexe 6</b>	<b>Organisation of demonstration / training – Preparedness provincial day in Phu Thanh Commune</b>
<b>Annexe 7</b>	<b>Request from the City of Hue</b>

### Enclosed documents

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1. Report on natural disaster (whirlwind) in Quang Cong Commune – June 2002
2. Article for Asian Disaster Prevention Workshop in Bali, Sept 2002

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## **Annexe 1 : Activity summary sheets**

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### **Activity 1: Animation – getting the message across**

#### **Action**

- The project has continued and expanded its programme of animation in the 4 project communes, in 2 other communes, and at provincial level.

#### **Result**

- Public and official awareness is considerably enhanced.
- The project is highly considered by commune leaders, and by provincial and Hue city leaders (see Annexe 7).
- DW was chosen by Provincial authorities to organise during the Provincial Preparedness Day the activities related to house reinforcement (see Annexe 6)
- The project approach is now known in Viet Nam, through Ministry of Construction National workshop and ADPC Regional workshop (see attached Article)

#### **Achievements**

**Raising awareness in the communes and the province is making use of a large range of animation activities designed to attract public attention. These include:**

- Distribution of publicity: pamphlets, caps, fans, waterproofs
  - Families and individuals reminded constantly about the message: “protect your house
- Posters on “10 key points of Storm Resistant Construction” distributed widely in communes: street banners with prevention message displayed in all project communes.
  - In the communes, it is hard to miss the project message shown on every road.
- Each commune’s loudspeaker system is used regularly to play a cassette prepared by the project, with songs and information on damage prevention.
  - The commune CDPC repeats these broadcasts frequently, and request for cassettes come from the communes.
- Provincial TV produced and showed a prime-time programme on the project and the prevention day.
- Strengthening existing houses, schools is perceived locally as a very important ‘awareness raising’ activity
  - Everybody in the community knows whose house has been strengthened and what was done.

### **Activity 2: Supporting preventive strengthening – partnership between family groups and CDPC**

#### **Action**

- The project organised 10 groups of families at hamlet level.
- The project supported commune ‘Commune Damage Prevention Committees’ (CDPC) who are now active in supporting the project activities in each commune in collaboration with the project.
- The project keeps liaising closely with local authority counterparts and this has nurtured a strong sense of local “project” ownership.

#### **Result**

- There is official and genuine support for the project and its activities. This manifests itself through the substantial commitment of personal time and commune resources that is taking place.

#### **Achievements**

- The prevention groups has discussed, decided, prepared and managed the reinforcement works with project support.
- In each commune, a ‘Commune Damage Prevention Committee’ has been established and has taken on a leading role in managing project activities in each commune.
- The communes are committing their own funds to project activities of economic and educational

importance, communes contribute to the costs of strengthening local infrastructure.

### **Activity 3 : Training**

#### **Action**

- The project has organised training sessions for builders, village cadres, and teachers.

#### **Result**

Workshops have given village builders and leaders, and teachers, which have significantly enhanced practical knowledge about house strengthening techniques and the need to do so.

#### **Achievements**

- Workshops have brought together commune construction team leaders and village representatives
  - Working sessions combine theory, visits and practice, using models and work on houses or schools
  - Local building practice and storm resistant solutions are discussed
  - Participants strengthen buildings in the commune during the workshop
  - The workshops are the first ever opportunity many people have had to consider these issues
- About 300 people have participated in the short training sessions on construction techniques, who in turn represent larger groups of builders who can benefit indirectly from the workshops.
- A manual is distributed that provides an overview of storm resistant techniques, and a simplified version is planned.
- Teachers have received information about storm damage prevention so that they can share this with their pupils.

### **Activity 4 : Demonstrating preventive strengthening**

#### **Action**

- Strengthening existing houses and public buildings is an ongoing and important practical activity that has shown people what can be done, what it costs and how to do it.

#### **Result**

- Families and the communes are keen to participate in the project activities.
- Families are making a significant financial commitment to strengthening their building, by using their own resources and by borrowing.
- The communes are also contributing funds for strengthening their public facilities.
- Demonstration of strengthening has so far taken place on 65 existing houses and 6 public facilities in the six communes. An additional 50 houses will be strengthened thanks to the credit programme set up by the CIDA grant.

#### **Achievements**

- The project has reduced its subsidy to each family to a maximum of 120 US\$ for strengthening
- Families are putting their money into the project: 30 US\$ in cash, and 110 US\$ from credit (in average)
- Encouraged to strengthen their homes, some families have decided to rebuild their houses completely at the same time.
  - The project has acted as an incentive for more generalised home improvement.
- 4 schools will have been strengthened, providing a good example to pre-primary and primary school children.
  - Most schools worked on by the project are similar in size to houses and use the same techniques.

### Activity 5 : Credit scheme

#### **Action**

- In each commune, a credit system has been organised, managed by the CDPC, for housing reinforcement.

#### **Result**

- This system is innovative and new in Viet Nam.
- Discussion took place in the family group to decide the breakdown of credit / subsidy for individual families.
- The specifications of credit (maximum 2,5 millions VN Dongs or 165 US\$, repayment in 18 months, monthly interest 0,3%) are well adapted to the financial capacity of families.

#### **Achievements**

- 58 families received loans (Total amount about 100 million VN Dongs). An additional 50 will receive
- At the date 31/12/2002, the ratio of repayment is 89%. Some families have a short repayment delay, due to the loss of autumn crops.

## Annexe 2 : Choice of beneficiaries and organisation of works

	CDPC	Hamlet	Family Group	Family	DW Team
<b>1. Choice of beneficiary families &amp; organisation of family groups (5-10 families)</b>					
Choice of hamlet (or groups of hamlets / 30-60 families)	x				x
Choice of families in the hamlet	x	X			x
- Meeting in the hamlet and explanation of the project discussion amongst families & list of priority families established					
Creation of a family group, with a leader	x		x	x	x
<b>2. Strengthening works – design/ decision – strengthening funds and credit</b>					
Visits to all the houses, and short list drawn up of work to be done	x		x	x	x
Preliminary study of each house, and of the family's requirements	x			x	x
Meeting of the group and presentation of technical and financial proposals for each family	x		x	x	x
- technical discussion for each case and evaluation					
- proposal for the breakdown between strengthening funds and credit and the amount of complementary contribution by the family					
Costed dossier finalised and agreement by the family on the work to be done	x			x	x
Agreement signed for the amount and conditions of strengthening subsidy and credit to be supplied	x			x	x
<b>3. Organisation of works : various options according to family circumstances</b>					
Programme of works and site organisation finalised	x			x	x
<i>Materials / Solution A (for example where the family has difficulty in managing the work)</i>	x				x
- DW supplies a list of materials to the representative of the CDPC	x				(x)
- Materials bought at local supplier by the representative of the CDPC (or DW)	x			x	
- Delivery to the family, reception and verification	x				(x)
- Payment by the CDPC representative (or DW) on presentation of final accounts					
<i>Materials / Solution B (Family manages whole process)</i>					
- DW/CDPC supplies a list of materials to the family	x			x	x
- The family buys materials at the local supplier				x	
- Delivery to the family and verification				x	
- Payment by CDPC to family after presentation of final accounts and verification of work.	x			x	x
<i>Labour / Solution A (The family has difficulty managing the work – a single widow, for example)</i>					
- Trained labour team organised by the representative of the CDPC (or DW if necessary) and organisation of family labour contribution if available	x			(x)	(x)
- Payment by DW to CDPC representative or to labour team after verification of accounts and work	x				x
<i>Labour / Solution B (The family manages the programme)</i>					
- Labour team hired by the family (with DW/CDPC agreement)	x			x	(x)
- Payment by CDPC to family after verification of final accounts and work	x			x	(x)
Control and supervision of works	x			x	(x)
Drawing up of final accounts	x			x	x
<b>4. Animation</b>					
Monitoring and support to families during the works and monitoring payments	x		x	x	
Fête at the finish of the work	x		x	x	x
Monitoring of credit reimbursements	x		x	x	x

### Annexe 3 : Summary of demonstration work and costs

#### 1. Houses

	Number groups	Number families	Total amount works	Subsidy DW	Family contribution	
					Credit	Cash
Phu Da	3	20	84 160 500	39 893 000	37 600 000	6 667 500
Quang Tho	3	19	61 235 900	28 535 900	31 600 000	1 100 000
Thuy Thanh	2	11	45 654 540	21 194 140	12 200 000	12 260 400
Vinh Hai	2	10	42 835 000	19 945 000	18 400 000	4 490 000
<b>Total</b>	<b>10</b>	<b>60</b>	<b>233 885 940</b>	<b>109 568 040</b>	<b>99 800 000</b>	<b>24 517 900</b>

Phu Thanh		5	9 988 000	9 988 000		
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<b>TOTAL</b>	<b>10</b>	<b>65</b>	<b>243 873 940</b>	<b>119 556 040</b>	<b>99 800 000</b>	<b>24 517 900</b>
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			Subsidy DW	Credit	Family cash
Breakdown			47%	43%	10%
Subsidy / Family			47%	53%	
Project / Family			90%		10%
Total per house / Dong\$		3 898 099	1 826 134	1 663 333	408 632
Rate \$/dong\$	15 331				
Total per house / US\$		254	119	108	27

	Number groups	Number families	Total loans	Repayment by month	Interest by month
Phu Da	3	20	37 600 000	2 148 900	60 100
Quang Tho	3	19	31 600 000	1 805 900	50 500
Thuy Thanh	2	9	12 200 000	697 400	19 500
Vinh Hai	2	10	18 400 000	1 051 700	29 400
<b>TOTAL Dong\$</b>	<b>10</b>	<b>58</b>	<b>99 800 000</b>	<b>5 703 900</b>	<b>159 500</b>
<b>Total US\$</b>			<b>6 510</b>	<b>372</b>	<b>10</b>

#### 2. Public buildings

	Type	Total amount works	DW	Commune / Village
Phu Da	Kindergarten	13 990 000	11 990 000	2 000 000
	School house	3 000 000	3 000 000	
Quang Tho	Kindergarten	17 500 000	13 500 000	4 000 000
Thuy Thanh	Primary school	28 563 000	14 073 000	14 490 000
	Prevention House	3 000 000	3 000 000	
Vinh Hai	Kindergarten	44 544 000	14 028 000	30 516 000
<b>Total</b>		<b>110 597 000</b>	<b>59 591 000</b>	<b>51 006 000</b>
			54%	46%

### 3. Total

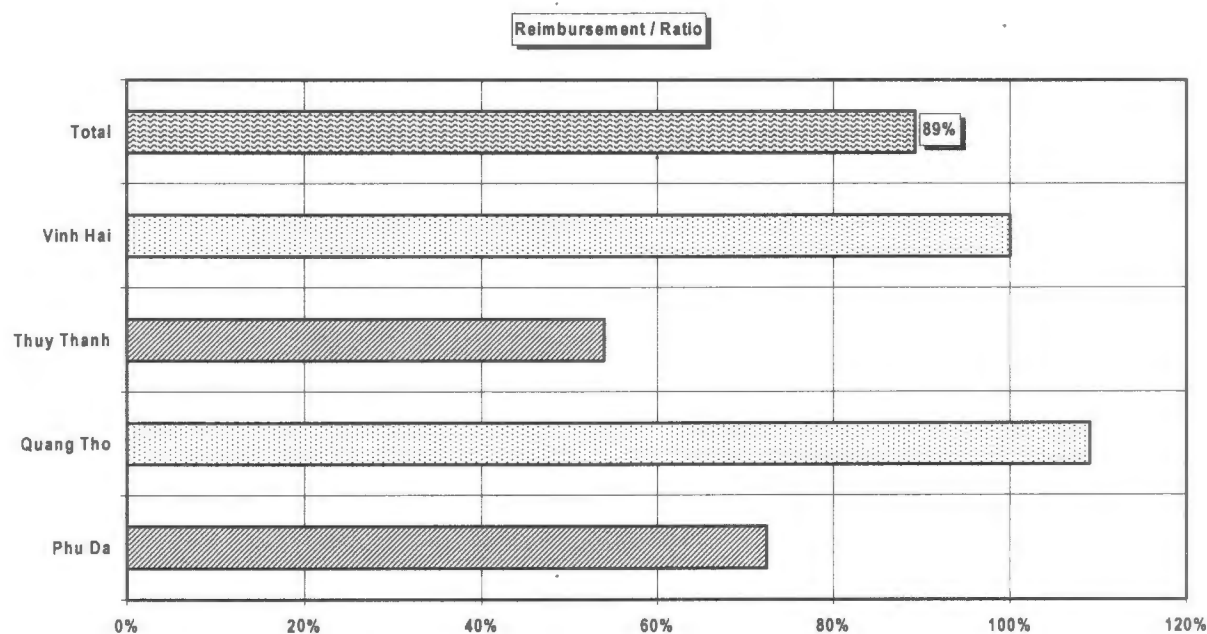
	Houses			Public buildings		TOTAL
	Subsidy	Credit	Family	DW	Commune	
Phu Da	39 893 000	37 600 000	6 667 500	14 990 000	2 000 000	101 150 500
Quang Tho	28 535 900	31 600 000	1 100 000	13 500 000	4 000 000	78 735 900
Thuy Thanh	21 194 140	12 200 000	12 260 400	17 073 000	14 490 000	77 217 540
Vinh Hai	19 945 000	18 400 000	4 490 000	14 028 000	30 516 000	87 379 000
Phu Thanh	9 988 000					9 988 000
<b>TOTAL</b>	<b>119 556 040</b>	<b>99 800 000</b>	<b>24 517 900</b>	<b>59 591 000</b>	<b>51 006 000</b>	<b>354 470 940</b>
	<b>\$ 7 798</b>	<b>\$ 6 510</b>	<b>\$ 1 599</b>	<b>\$ 3 887</b>	<b>\$ 3 327</b>	<b>\$ 23 121</b>

Costs in VN Dongs (1 US\$ = 15 330 Dongs, average rate of exchange during the project)

## Annexe 4 : Credit scheme - repayment

### Loans and repayment

Commune	Families	Loans (VN Dongs)	Reimbursement 31/12/02	Ratio
Vinh Hai	10	18 400 000	2 612 100	100%
Thuy Thanh	9	12 200 000	937 300	54%
Quang Tho	19	31 600 000	7 314 700	109%
Phu Da	20	37 600 000	4 291 900	72%
<b>Total</b>	<b>58</b>	<b>99 800 000</b>	<b>15 156 000</b>	<b>89%</b>



**Credit scheme / example**

	Period	1	2	3	4	5	6	7	8	9
	Month	6	12	18	24	30	36	42	48	54
<b>Total amount by family in VN Dong</b>	<b>3 500 000</b>									
<b>Number of families (initial group)</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>						
<b>Credit</b>	<b>55%</b>		<b>0</b>	<b>0</b>	<b>0</b>					
<b>Subsidy</b>	<b>45%</b>			<b>1</b>	<b>1</b>	<b>1</b>				
<b>Amount of credit in VN Dong</b>	<b>1 925 000</b>				<b>1</b>	<b>1</b>	<b>1</b>			
<b>Amount of subsidy in VN Dong</b>	<b>1 575 000</b>					<b>1</b>	<b>1</b>	<b>1</b>		
							<b>0</b>	<b>0</b>	<b>0</b>	
<b>Total initial fund in VN Dong</b>	<b>17 500 000</b>							<b>1</b>	<b>1</b>	<b>1</b>
in US \$	1 144								<b>0</b>	<b>0</b>
<b>Loan interest by month</b>	<b>0,3%</b>									<b>0</b>
<b>Total duration in month</b>	<b>18</b>									
<b>Credit (US\$)</b>	<b>126</b>									
<b>Subsidy (US\$)</b>	<b>103</b>									
<b>Number of current loans</b>		<b>5</b>	<b>5</b>	<b>6</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>
<b>Reimbursement by month</b>	<b>110 817</b>									

	Period	1	2	3	4	5	6	7	8	9
	Month	6	12	18	24	30	36	42	48	54
<b>Cumulated number of loans</b>		<b>5</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>8</b>	<b>9</b>	<b>9</b>	<b>9</b>
<b>Number of delivered loan at the beginning of the period</b>		<b>5</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>

## Annexe 6 : Preparedness provincial day in Phu Thanh Commune

### Request from the Provincial storm and flood control Committee

**COMITÉ POPULAIRE  
DE LA PROVINCE TT HUÉ**  
COMITÉ DE DIRECTION POUR LA PRÉVENTION  
DES INONDATIONS-CYCLONES ET RECHERCHE-SECOURS

**RÉPUBLIQUE SOCIALISTE DU VIETNAM**  
**Indépendance- Liberté - Bonheur**

N°: 84 CV/PCLB

Hué, le 27 Août 2002

“Objet: Propositions d’assistance  
concernant le support d’informations, d’études préliminaires  
de l’habitat, et d’expertises sur la technique de renforcement  
anti-cyclonique, au service de l’entraînement de Prévention  
des Inondations-Cyclones et Recherche-Secours de l’année 2002”.

À l’attention de: - Comité de Direction du projet “Prévention des dommages causés à l’habitat par les cyclones de DW, à Hué”.

Le Projet DW a obtenu des résultats favorables pendant les derniers temps pour les actions de renforcement de l’habitat contre les cyclones dans les communes de la province TTHué. Désignée à l’heure actuelle par le Comité National de Direction pour la Prévention des Inondations-Cyclones et Recherche-Secours (PIC-RS), la Province TTHué organisera un entraînement PIC-RS, incluant la protection et le renforcement de l’habitat contre les cyclones, en faveur des habitants du village Hai Trinh de la commune Phu Thanh.

Le Comité de Direction PIC-RS a proposé au Projet DW d’envoyer ses experts pour participer au support des informations et distribution de documents, études techniques préliminaires pour le renforcement anti-cyclonique des habitations du village mentionné ci-dessus, dont le nombre prévu sera de 2 à 3. Le Comité est bien d’accord sur les préparations prévues le 3/9/2002 dans la commune Phu Thanh et le village Hai Trinh.

Enfin, l’assistance de l’Organisation DW et du Comité de Direction du Projet DW à Hué contribuerait efficacement à l’entraînement PIC-RS en faveur de la commune.

Pour le Comité de Direction PIC-RS de la Province  
**PRÉSIDENT**  
**LE VAN HOANG**

**Destinataires :**

- comme ci-dessus;
- le Comité provincial de Direction PIC-RS;
- le Comité populaire du District Phu Vang;
- le Comité populaire de la Commune Phu Thanh;
- pour être enregistré;

### Actions related to Preparedness Day

- (i) Survey of the village and houses; choice of families;
- (ii) Organisation of one day training session / for cadres, families, workers
- (iii) Reinforcement work on 5 houses
- (iv) Organisation of visits and exercises on the 8/9/2002 (preparedness day)



**Annexe 7: Request from the City of Hué and from the Association of Cities of Viet Nam**

*(Translate from Vietnamese)*

**COMITÉ POPULAIRE  
DE LA VILLE DE HUÉ**

N°: 709/CV-UB

**RÉPUBLIQUE SOCIALISTE DU VIETNAM  
Indépendance- Liberté - Bonheur**

*Hué, le 21 Août 2002*

**Objet: Prévention des cyclones**

**À l'attention de: M. Guillaume Chantry  
Directeur du Projet Development Workshop**

Suite à la réunion entre Development Workshop (DW) et le Comité populaire de la Ville de Hué, une collaboration fructueuse avec DW est souhaitable pour pouvoir aider mieux les familles pauvres des quartiers, communes à résister contre le risque des dommages causés à l'habitat par les cyclones.

La Ville de Hué souhaite également que le Projet continue d'élargir ses actions d'animation ainsi que celles de formation, et en même temps d'établir un système de crédit pour renforcer l'habitat dans de nombreux quartiers, communes relevant de la Ville de Hué.

En tant que président de l'Association des Villes du Vietnam, je propose à DW de promouvoir la collaboration des Villes du Vietnam qui deviendront partenaires et bénéficiaires du Projet DW (fourniture des méthodes d'animation, conseils aux familles pour la prévention cyclonique ...) à travers des rencontres, des formations de construction anti-cyclonique réservées aux responsables de ces villes.

Veillez recevoir, Monsieur le Directeur, mes salutations les meilleures, en souhaitant que la collaboration étroite entre DW et le Comité populaire de la Ville de Hué devienne réalité.

**Pour le Comité Populaire de la Ville de Hué  
Le Président**

*Nguyen Viet Tien*

**Président de l'Association des Villes du Vietnam**

**Enclosed documents**

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- 1. Report on natural disaster (whirlwind) in Quang Cong Commune – June 2002**
- 2. Article for Asian Disaster Prevention Workshop in Blai, Sept 2002**



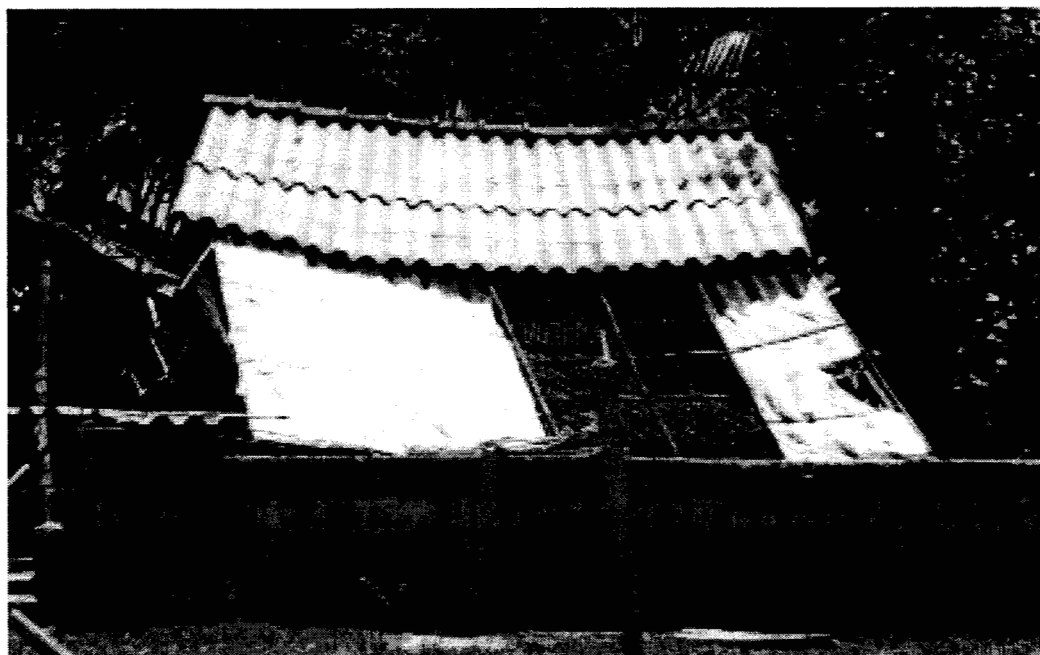
DU AN PHONG CHONG NHUNG THIET HAI VE NHA O DO BAO GAY RA O MIEN TRUNG VIET NAM  
PREVENTION DES DOMMAGES CAUSES A L'HABITAT PAR LES CYCLONES DANS LE CENTRE VIET NAM  
PREVENT TYPHOON DAMAGES TO HOUSING, CENTRAL VIET NAM



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## Whirlwind on Quang Cong Commune - 12 June 2002

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Quang Cong Commune  
Quang Dien District  
Thua Thien Hue Province

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*This report was prepared after a visit of Development Workshop team in Quang Dien District and Quang Cong Commune, on the 17<sup>th</sup> June 2002.*

*Meetings were organised with the Vice Chairman of the District, and in Quang Cong with the Commune authorities, where some informations was given. Some buildings affected by the disaster were visited.*

### Presentation of the Commune

Quang Cong Commune (Quang Dien District, Thua Thien Hue Province) is located between the northern Hue lagoon and the sea (see Map).

The population is about 6 000 people (2 000 families).

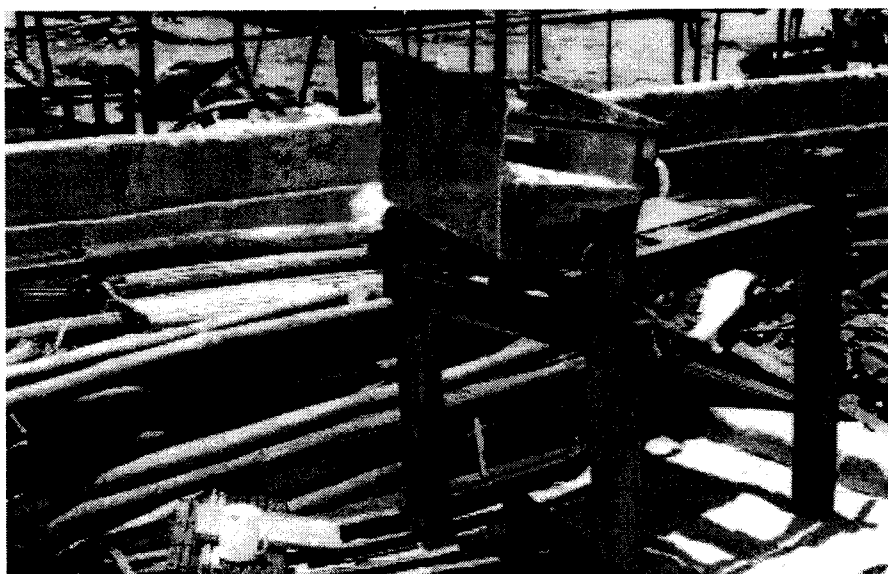
Main activity : fishing in the lagoon (and in the sea), shrimps breeding, agriculture (small area).

The level of income is very low, compared to other communes in the District.

Many inhabitants have emigrated to others parts of the country and abroad.

### Characteristics of typical housing in the Commune

- Structure with reinforced concrete posts
- 50% walls of cement blocks
- 50% walls of bamboo mat, iron sheets
- Roof structure : mainly bamboo
- Roof covering : iron sheets, fibrocement



*After the whirlwind*

## Whirlwind of the 12<sup>th</sup> June 2002

A sudden whirlwind hit the Commune on the Thursday 12<sup>th</sup> June, at about 15h p.m. (during few minutes). The wind force was very strong.

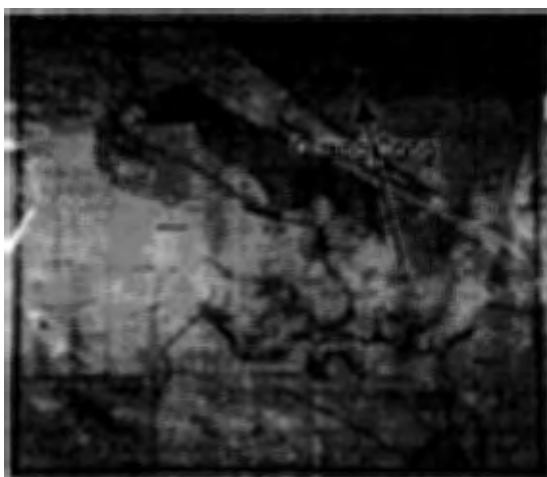
It came from the mainland, crossed the lagoon and the commune and disappeared in the sea (see Map).

The area most affected is called "Con Gai", in the centre of the commune.

This area is very vulnerable, with no natural protection against winds, and also with very weak housing stock.

This phenomena is common in Viet Nam (see Annex 2), and cause many destructions.

Map : Track of the whirlwind



## Destructions caused on buildings by the whirlwind

The impact of the whirlwind is impressive:

4 dead (one men and three children on a boat), 9 houses destroyed, 116 houses totally or partially unroofed, damages to public buildings, destructions of economic or communications installations (detail in Annexe 1).

### Details about destruction on housing and public facilities

#### **1. Public facilities**

School, Post office, Dispensary : partially unroofed, due to a weak link of tiles with the roof structure.

School (under construction) : the wind lift the upper formwork (not strongly tied).

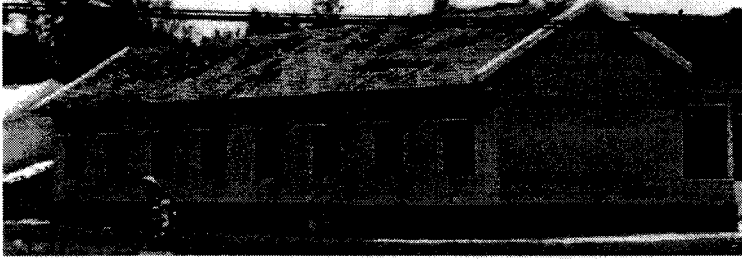
#### **2. Houses**

##### a) Totally (or partially destroyed)

The houses destroyed has numerous points of weakness : structure, links between elements.

##### b) Totally or partially unroofed

The links between structure – walls and roof structure mainly bamboo) – roof covering are very weak (see Pictures), and the wind easily blows off the roof.

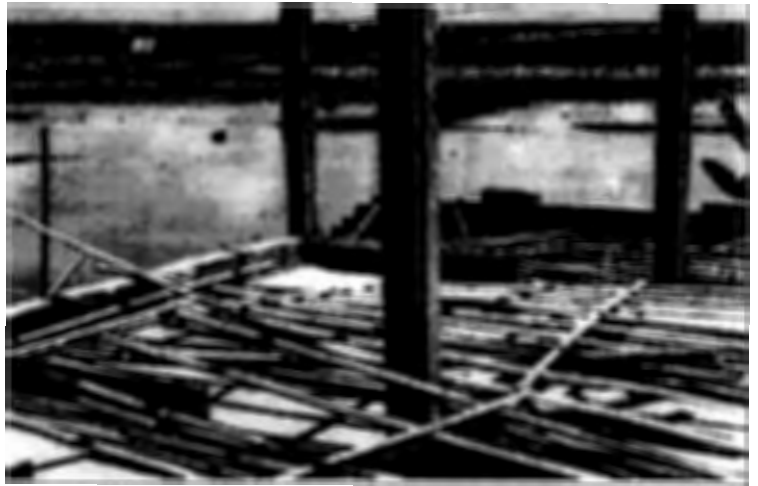


School

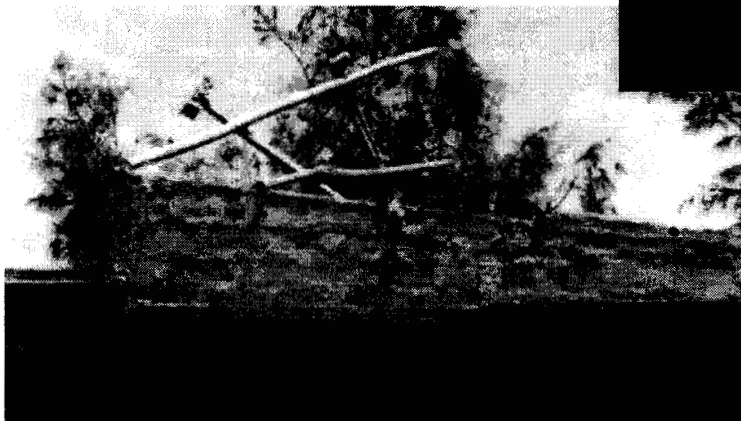
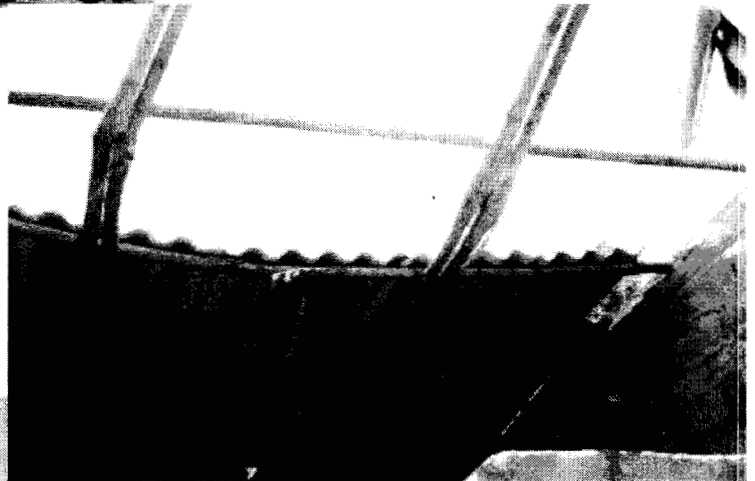


House entirely destroyed

Houses partially destroyed



Houses unroofed



## Relief

After the disaster, the local authorities mobilise different departments to repaired damaged infrastructures (telephone and electricity networks).

The family suffering the lost of one member received a donation of 1 000 000 VN Dongs, for the funeral.

The family, with a house destroyed, received 900 000 VN Dongs. The local authorities ask to these families to prepare reinforced concrete posts with this small amount of money, not sufficient to rebuild their houses.

The others families received only support from the community, and help from the soldiers, to repair their houses.

*Though the public buildings will be repaired by the relevant departments, it is expected that the families will received no more donations from authorities.*

## Proposals

### 1. Immediate term

After discussions with local authorities, DW propose to organise a day of mobilisation, which will include :

- Meeting with the local authorities, and communal staff
- Meeting with the affected families, and advice on how rebuild or reinforced their houses
- Show, with songs, poems, and theatre play about storm prevention

*Estimated cost : 5 000 000 Dongs (330 US\$)*

### 2. Medium term

Due to the conditions of families and the vulnerability of their houses, a global programme of reconstruction – improvement is needed to avoid future destructions.

The storm resistant buildings techniques are applied by DW projects in various communes of the Province.

This programme should include a strong component of animation and training of builders, and last 4 months.

#### Estimated Budget (VN Dongs)

Reconstruction :	9 houses x 10 000 000	90 000 000
Reinforcement :	120 houses x 3 000 000 (*)	360 000 000
Reinforcement :	public facilities	<u>10 000 000</u>
<i>Total works</i>		<i>460 000 000</i>
<i>Animation, training</i>		<i>10 000 000</i>
<i>DW team support</i>		<i>30 000 000</i>
<b>Total VN Dongs</b>		<b>500 000 000</b>
<b>Total US \$</b>		<b>32 750</b>

(\*) Not included : contribution form the families.

## Whirlwind Annex 1 : Official report from the Provincial People's Committee of Thua Thien Hue

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### IMMEDIATE REPORT ON THE WHIRLWIND IN THE THUA THIEN HUE PROVINCE

Translation prepared by: UNDP/MARD - DISASTER MANAGEMENT UNIT, VIE/97/002

As of 14 June 2002

(According to Report No. 32 on the whirlwind on 12 June 2002 in Thua Thien Hue Province, issued by the Provincial People's Committee of Thua Thien Hue)

#### I. DISASTER SITUATION

##### 1. Whirlwind Situation

At 15:00 on 12 June 2002, in the Quang Dien and Huong Tra Districts, Thua Thien Hue Province, there was a whirlwind in combination with heavy rain. The center of the whirlwind was situated in Hamlet No. 2, No.3, and No. 4 of Quang Dong Commune, Quang Dien District. The sudden whirlwind and strong wind caused serious losses of people and property.

##### 2. Initial Damage

###### a. People:

Total people killed: 04 fishermen

###### b. Housing:

- More than 500 houses damaged, of which 09 houses collapsed and 116 houses unroofed
- 12 classrooms, markets, offices of the Communal People's Committee of Quang Cong, and communal clinics unroofed

###### c. Other damage:

- 12 small boats sunk and then lifted
- 2.5 km of outer dyke, protecting the aquatic areas, heavily damaged
- 4.5 km of telephone cables and 0.5 km of 0.4 KV electric cables were destroyed
- 81 concrete pillars for hanging telephone cables of Quang Cong Post Office collapsed
- 01 set of computer of the Communal People's Committee broken by rain
- 400 casuarina, eucalyptus, and coconut trees collapsed
- More than 1,000 fishnets destroyed

#### II. DISASTER AFTERMATH OVERCOMING ACTIVITIES

- Provincial People's Committee directed officers from the Post and Telecommunication Sector and Electric Sector to pay a site visit to the affected localities to gather information and help restore the spoiled telephone and electric cables with an aim to secure communication and electric supply at the earliest time possible.
- Provincial leaders worked directly with leaders of Department for Labor, Invalid and Social Affairs and Provincial Committee for Flood and Storm Control to give guidelines for whirlwind aftermath rehabilitation and live stabilization. Presently, the province uses its budget to provide relief to affected households. The 09 heavily-damaged households were provided with 01 blanket and VND 100,000 each. Relatives of the 04 dead victims were assisted with 01 blanket and VND 100,000 each.
- The District Department for Labor, Invalid, and Social Affairs granted the Communal People's Committee the initial amount of VND 03 million to assist the heavily-damaged households restoring their houses and stabilizing their livelihood.
- In the afternoon of 13 June 2002, leaders of the Provincial People's Committee and District Committee for Flood and Storm Control of Quang Dien paid a site visit to see and give guidelines for rehabilitation to localities.

- Director of Agriculture and Rural Development Department assisted heavily-damaged households VND 03 million.
- At the request of leader of Provincial People's Committee, the Provincial Post Office appointed officers to implement aftermath overcoming activities. Presently, communication is cleared and low-voltage electric network is expected to be available by 14 June 2002.
- Affected- people actively initially restored 400 unroofed houses.
- Provincial People's Committee sent an urgent report on damage caused by the whirlwind to the Prime Minister and are directing District's People's Committee to coordinate with relevant agencies to help affected victims restore production and livelihoods.

### III. DAMAGE ESTIMATED

The damage and losses were estimated at: VND 1,251,000,000 (equivalent to US\$ 83,400)

### V. RECOMMENDATION

1. It is proposed that the province assist affected localities with VND 148,000,000 to:
  - Rehabilitate 09 houses which were totally collapsed: VND 90,000,000 (10,000,000 each)
  - Assist 116 households which were heavily damaged: VND 58,000,000 (VND 500,000 each)
2. People's assistances to disaster victims are welcomed
3. Followings are matters of concern drawn from the whirlwind occurrence:
  - Attention should be paid to the security of poor households living along side the lagoon
  - Ensure life safety to children
  - Precaution should be taken for whirlwinds and thunderstorms often occur in the dry season
  - Relevant sectors should check and consolidate the communication system, low-voltage and high-voltage electric systems. This whirlwind showed that the design of infrastructure facilities does not meet the safe standard.

-END-

## Whirlwind Annexe 2 : Damages caused by whirlwind in Viet Nam (1993-1998)

Source : Whirlwind disaster study, DMU (Project VIE/97/002), Hanoi 2000

No.	Place	Number of gale and vortex	Human damages		Housing damages		Paddy and agricultural products	Other damages
			Dead	Injured	Destroyed	Damaged		
1	Lai Chau	2	2	65	540	1695	51 ha	
2	Son La	12	3	59	221	1367		
3	Lao Cai	4	1	21	165	994		
4	Yen Bai	5	6	53	233	2193		
5	Tuyen Quang	10	3	28	101	2171		
6	Ha Giang	14	16	35	208	2737		
7	Cao Bang	5		10	10	1973		
8	Bac Can	2				120		
9	Thai Nguyen	2		3	16	702		
10	Bac Ninh	2	6	16		60		
11	Lang Son	6	3		18	617	684 ha	
12	Quang Ninh	1	3	5		273		
13	Bac Giang	1	2	2	31	224		
14	Vinh Phuc	15	22	512	3093	27651		
15	Phu Tho	6	5	52	105	460		
16	Ha Tay	4	8	17		1049		
17	Hoa Binh	7		45	263	2443		
18	Ha Noi	3	1	15		1451		
19	Hai Phong	1	7			15		
20	Thai Binh	2	2	3	21	417		
21	Nam Ha	1		1	5	200	4030 ha 193 ha	
22	Hung Yen	1		1	1	15		
23	Thanh Hoa	14	7	229	646	14044		
24	Nghe An	9	12	37	47	6702		
25	Ha Tinh	8	16	30	592	9368		
26	Quang Binh	5	1	5	58	200		
27	Quang Tri	3	7	4		153		
28	Thua Thien-Hue	4	10	118	399	1398		
29	Da Nang	4	9	8	215	381		
30	Quang Nam	3	13		50	324		
31	Quang Ngai	1		7			Destroyed 4 ships, damaged 10 ships  Destroyed 14 ships  Destroyed 11 ships, 10 ships missing	
32	Ninh Thuan	7	6	29	56	158		
33	Binh Thuan	7		5	16	167		
34	Kon Tum	5	9	13	43	146		

No.	Place	Number of gale and vortex	Human damages		Housing damages		Paddy and agricultural products	Other damages
			Dead	Injured	Destroyed	Damaged		
35	Dac Lac	5	2		62	150	<i>55 ha of rubber</i>	
36	Lam Dong	4		7	25	310		
37	Dong Nai	1	1		34	294		
38	Binh Duong	6	3	5	30			
39	Song Be	2		7	523	520		
40	Dong Thap	1	9		516	96		
41	An Giang	4	9	8	4	105		Destroyed 95 canoes
42	Kien Giang	1			49	126		Destroyed 39 canoes
43	TP Ho Chi Minh	3		3	29	230		Destroyed 69 ships
44	Tien Giang	3	1	12	208	352		
45	Tien Giang	8	5	4	61	150		
46	Ben Tre	8	8	102	641	659		
47	Vinh Long	2			116			
48	Can Tho	6	4	9	86	558		
49	Tra Vinh	2	1	2	74	271		
50	Soc Trang	2	11					
51	Bac Lieu							
	Ca Mau						Destroyed 5 ships	
<b><i>Total damages</i></b>		235	234	1.587	9.613	85.742	4929 ha	417 ships

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## **Whirlwind Annexe 3 : Storm resistant building techniques – DW Project**

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### The 10 key points

1. Choose the location carefully to avoid the full force of the wind.
2. Build a house with a simple shape to avoid negative pressure.
3. Build the roof at an angle of 30° to 45° to prevent it from lifting off.
4. Avoid wide roof overhangs; separate the veranda structure from the house.
5. Make sure the foundations, walls, roof structure and roof covering are all firmly fixed together.
6. Reinforce the triangular bracing in the structure.
7. Make sure the roof covering is attached to the roof structure to prevent it from lifting.
8. Match opposing openings.
9. Use doors and windows that can be closed.
10. Plant trees around the house as wind breaks.

### 3. Article for Asian Disaster Prevention Workshop in Blai, Sept 2002

#### Community based approaches to disaster mitigation

##### More to lose:

##### Establishing community capacity to reduce vulnerability to economic loss caused by storm damage to houses in central Viet Nam

Authors: John Norton & Guillaume Chantry

Development Workshop

July 2002

##### Summary

***Vulnerability in domestic shelter in central Vietnam is a critical and under-addressed issue.***

*Families are extremely poor, but despite this over the past decade they have been investing their scarce resources in building better housing. Unfortunately this investment is insecure, because storm resistant techniques are not applied. Too often unnecessary damage is caused by the annual round of storms that hit the coast. But this damage can be avoided if families make the extra effort to strengthen their homes by applying ten key but simple points of storm resistant construction. Preventive action to strengthen community and domestic buildings is an effective and cost efficient manner of reducing economic and material vulnerability.*

*This paper presents the results of a project designed and managed by Development Workshop and Alternatives in Thua Thien Hué province, central Viet Nam, since 1999 that promotes preventive strengthening.*

***The project objective is to reduce vulnerability and damage in houses through preventive strengthening of existing buildings. This in turn helps secure family investment in shelter and enables families to subsequently invest in improvements, not repairs to damage caused by storms.***

*DW has developed an interactive programme in each village that works to stimulate short and long term awareness of the need to take preventive strengthening in building and rebuilding. The project works with women's groups, local communities and schools, and with a strong relationship with local government. It demonstrates how preventive action can realistically be applied on existing homes and village buildings, showing achievable, durable and affordable strengthening within the community that respect local habits and resources.*

***Through animation and demonstration, the project has been successful in changing grass roots and official attitudes.***



## More to lose:

### Establishing community capacity to reduce vulnerability to economic loss caused by storm damage to houses in central Viet Nam

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#### The risk of storm damage to homes in central Viet Nam

##### *The social and economic context*

In the past decade Viet Nam has been emerging from decades of poverty and strife, and opening up opportunities both nationally and domestically. Poverty<sup>7</sup> decreased from 60% to 37% between 1993 and 1998, and while levels of poverty in rural areas have remained higher there has nevertheless been a relatively steady improvement over recent years.

This encouraging growth and improvement in general conditions can in large part be attributed to the economic reforms launched by the Vietnamese government in 1986, *doi moi*, which moved Viet Nam towards a market economy and contributed to a growth in family revenues. More families have been able to make small investments to acquire commodities such as bicycles, and the last decade has seen the start of formalised opportunities to borrow for income generation activities.

Nevertheless, despite this encouraging picture a significant proportion of families still live *below* the poverty line. A large proportion of families also live precariously just above it. Many of the latter families are 'temporarily poor'<sup>8</sup>, resorting to a variety of activities in order to survive with irregular incomes. In this context, *reducing vulnerability<sup>9</sup> is a key to reducing poverty.*

It only takes a small mishap for a family to return to conditions of near starvation, ill health and debt. Making sure that the home and its contents are not at risk is therefore a fundamental need.

##### *The importance of the home*

For most families their home is one of the largest investments that they will ever make. A decent and storm resistant home provides security to the family, for family health and family possessions, including those needed for income generating activities.

Achieving a decent and structurally resistant home has invariably required enormous effort and saving. But families also describe how this incremental investment has often been destroyed by typhoons and floods. Such destruction occurs largely because neither materials nor structure have been used in a manner that assures the security of the building. Many families tell of the repeated destruction of their home by storms.

##### *Vulnerability: the risk and impact of typhoon damage*

The risk of destruction is ever-present. Viet Nam is one of the most disaster prone countries of the world. Major disasters occur at least every decade. There are indications that the severity of storms is increasing<sup>10</sup>: the floods in 1999 that hit central Viet Nam were the worst in living memory; families still talk of the huge losses that occurred in the 1997 massive typhoon Linda when 300 000 houses were destroyed and many more damaged.

Although less destructive, the coast is hit annually by tropical storms at a rate of 4 or 5 a year or more<sup>11</sup>. What are in effect "regular" disasters cause extensive and often repeated damage to housing and infrastructure as well

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<sup>7</sup> Where a family cannot satisfy the bare necessities of life. Viet Nam Living standards survey 1997 – 1998, Hanoi 1999, Viet Nam General Statistical Office.

<sup>8</sup> Families whose income levels fluctuate above and below an acceptable minimum level during periods of natural disaster and economic crisis (Vu Tuan Anh, GSO Viet Nam 1999).

<sup>9</sup> World Bank report: "Viet Nam: attacking poverty", November 1999.

<sup>10</sup> Viet Nam country report, Climate Alert Volume 7, No 4 July-August 1994.

<sup>11</sup> Tran Nhon, Vice-Minister, Ministry of Water Resources, Hanoi 1998.

as losses to agriculture and fisheries.

In parallel with economic growth, *the levels of economic loss have climbed steadily* since 1985, reaching over 600 million USD by 1996<sup>12</sup>. This reflects the increase in private and public investment that has taken place.

### **Dealing with annual disasters**

Whilst it is more difficult to provide protection against massive typhoons such as those that hit central Viet Nam in 1985 and again in 1997, *damage in the more frequent annual cyclones can and should be largely avoided.*

Avoiding damage can be achieved at a far lower economic and social cost compared to that of reconstruction by taking *preventive* action to increase the resistance of buildings and the resistance of their components to the effect of typhoons, high winds and floods.

DW experience of working with hundreds of families in Thua Thien Hué Province since 1999<sup>13</sup> has shown that for an average house construction cost of 980 USD for 40m<sup>2</sup>, an extra 15 - 30% needs to be spent on making the building typhoon resistant. The same applies to communal facilities such as schools and markets.

### **Housing in evolution: the renewal of housing stock has increased vulnerability to loss**

It is a paradox that the very real improvements that have been made in building have contributed to increased vulnerability to loss, when this loss is considered in terms of the cost to the family of recovery and rebuilding a damaged or destroyed home after a disaster. Because more time and money has been invested in the home, this cost has become considerable. Vulnerability has in effect increased.

Fifteen years ago, the typical situation for villages in the centre of Viet Nam was a cluster of houses with thatched roofs, a pole or bamboo frame, and bamboo mat walls. Most if not all of the materials came from the locality, and many of these materials could be gathered. Capital investment in the home was very low and few inputs were monetary, even though families have always set social importance on getting, if they could, a good timber roof frame. Although many houses were frail and easily destroyed by typhoons, recovery could be achieved at relatively low cost and depended significantly on family and neighbour support. Once the immediate effects of a typhoon had subsided, village reconstruction took place quickly.

By the mid 1980's change was taking place. Families had begun improving their homes. New and purchased materials, such as cement, fired bricks and roof sheets, came into more widespread use. But along with these changes in building practice many of the storm resistant features of traditional housing, that, for example, had tied the roof down and held the structure together, have been neglected.

There would appear to be four related reasons for this:

- Ignorance: families interviewed<sup>14</sup> often say that they do not know how to make their new house stronger.
- Poverty: shortage of resources encourage people to make economies.
- Belief in new techniques: people mistakenly place greater faith in new materials thinking they are inherently more storm resistant.
- Unfinished homes: the incremental process of building means that many homes have not been finished, leaving parts of the structure weak and exposed.

*The result is that along with investments in improvement and new building, there is also more - materials, investment and effort - at great risk of being lost and destroyed.*

What does this mean for a typical family with a monthly income of between 20 and 30 USD?

Their home<sup>15</sup> with a floor area of 40m<sup>2</sup> and a terrace, represents an investment of between 650 and 1000 US\$.

<sup>12</sup> Disaster Management Unit, UNDP, Web site data.

<sup>13</sup> DW VN – database on house, improvement and strengthening costs.

<sup>14</sup> "Case studies of beneficiaries families" Lam Ngoc Mai, July 2001, and "External evaluation" Tran Minh Chau, June 2001.

The family may well have made their own cement tiles and blocks. But they will have bought most of the other materials including cement and steel, clay roof tiles or roof sheeting if these are used, and doors and windows. Help from the family and neighbours is very important, but as well many families borrow money to cover the building costs, and often at extortionate rates from informal sources.

The effect is that, today, damage to your house costs much more to repair than it did before, and such loss has a major economic and physical impact on the family and its health. Loss of roof tiles - a frequent and avoidable occurrence in a typhoon - costs some 100 US\$ to replace; loss of the whole house requires many hundreds of dollars.

To get an idea of the scale of this problem along the coastline of central Viet Nam, visual estimates by DW suggest that some 70% of provincial and rural housing in Central Viet Nam has been replaced or renewed over the past 15 years. But sadly, of these, commune surveys in Thua Thien Hué indicate that despite this investment in new building about 70% of housing stock can only be classified as 'semi-solid' or weaker, and thus very vulnerable to damage.

As such, families are very vulnerable to loss.

*Failure to take preventive action to ensure that such damage does not occur has a major effect of diverting money away from economic growth, and family security and health.*

#### ***What can be done?***

In the face of repeated typhoons and disasters, the government and the international community has been active in both responding to emergency situations and the provision of relief and support for rehabilitation. The government assists where it can in the aftermath of each disaster, for example by handing out roofing sheets to those who have lost their homes. When a disaster occurs, the donor community also contributes to the process of rebuilding, and organisations such as the International Federation of the Red Cross have been prominent in helping people acquire safe "core" houses. But given the scale and the repetitive nature of the damage, donor support for reconstruction or building core houses is inevitably limited in its impact and cannot reach out to a sufficiently large proportion of the population. Until recently, government policy and prevention programmes have also focussed on strengthening and developing infrastructure, securing land and sea based productive capacity and protecting dykes and riverbanks<sup>16</sup>.

Meanwhile, faced repeatedly with major losses, families and local communities have themselves to take on most the burden of rebuilding, with only exceptional support. The cost of rebuilding is considerable, and many families (a) have to borrow in order to recover, and (b) often find themselves living in houses that are at best no stronger than before, and at worst, considerably weaker.

What support there is does not necessarily make the best use of scarce resources. For example, in the aftermath of typhoons and floods in 1999 that destroyed 10 000 houses and damaged 470 000 in central Viet Nam, the prime minister decreed exceptionally<sup>17</sup> that 1 million VN Dongs (+/- 70 USD) be given to each person whose house has been destroyed to help reconstruction: had this same money been used *in prevention* would have had a lasting impact on reducing vulnerability and loss. Again in 2001 after Typhoon Ling Ling, the province of Binh Dinh provided VN Dongs 3 millions to each family that had lost its house – a sum that would have gone a long way to preventing this loss<sup>18</sup>.

It is in this environment that DW has applied its strategy: to encourage people to take preventive action to

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<sup>15</sup> Not including the kitchen, veranda and any annexes.

<sup>16</sup> See, for example, the Central Provinces Initiative for Natural Disaster Mitigation in Central Viet Nam, Second National Strategy and Action Plan for Disaster Mitigation and Management in Viet Nam, March 2002.

<sup>17</sup> Central Committee on Flood and Typhoon Control "Official report on the damage and response to flood and typhoons in the south-central and central highland provinces of Viet Nam." Hanoi, November 1999.

<sup>18</sup> Viet Nam News Agency, Nov 12 2001.

safeguard the investment that they have already made in their homes and small local public facilities, by incorporating typhoon resistant details into both existing buildings and new construction.

### A programme to promote preventive strengthening to protect the home and family investment

The DW programme in central Viet Nam demonstrates a strategy that channels resources, including each family's own resources, into prevention rather than reconstruction. A long term aim is too see this strategy widely adopted.

Building on earlier experience in Viet Nam between 1989 – 93, since 1999 DW<sup>19</sup> has been working in the central Viet Nam province of Thua Thien Hué with the population in all the coastal districts.

The strategy is to reduce vulnerability and damage in houses and community facilities.

#### Ten key points of typhoon resistant construction.

The ten points can be applied to almost any type of building in the communes, regardless of the type of structure or the type of materials that have been used. Each point describes a principle that when applied will reduce the risk of damage to the building or loss of materials. The practical training that DW provides makes sure that people know how to apply the ten key points to different types of buildings and materials, and the demonstration work on existing buildings shows people in practice what the preventive strengthening consists of. The project particularly encourages people families to strengthen existing buildings, but the same principles.

and assisting families to reduce their vulnerability in a sustainable manner.

The idea at centre of the project is to encourage families to apply the ten key points of storm resistant construction (see box)

*The focus is on encouraging*



But the project itself creates the environment that makes people aware of what should be done to reduce vulnerability, aware of how to do it, and how to put this into practice. The project creates the institutional, technical and financial environment in which this takes place. And in collaboration with families and the communes, it demonstrates how strengthening of buildings is done.

*DW's actions work at two levels:*

1. The commune: convincing through doing – local partners who doubted that much could be done with a small budget are now convinced by the project strategy of support and mobilisation for preventive strengthening.
2. Decision makers: DW collaborates with community and provincial leaders to encourage the adoption of the strategy of support for preventive strengthening of buildings in high risk districts and communes. Local leaders are now taking the initiative to help expand the programme.

In the communes, the DW project comprises three groups of action in each partner commune<sup>20</sup> :

- **Animation:** getting the message to the population that preventive strengthening is easy and important
  - Developing the **social and institutional environment** that supports preventive strengthening.
  - Encouraging the **formation of family groups** for preventive strengthening in hamlets.
  - **Building civic capacity** with the People's Committees to organise events, provide support to families and advice on prevention.
- **Practical action and support** : training, demonstration and finance

<sup>19</sup> DW is supported by Canadian International Development Aid (CIDA), Alternatives (Canada), and the Viet Nam Canada Aid Foundation (FAVC)

<sup>20</sup> Rural commune : from 3 to 10 000 inhabitants

- **Developing practical skills** in the community and developing knowledge about safe building.
  - **Demonstrating** how preventive strengthening of existing buildings can be done.
  - Developing **access to small loans** to cover some of the costs of strengthening one's home.

### 1/ Animation - getting the message across

A major issue is that families do not know that preventive strengthening is possible. They need to be aware that prevention is essentially easy and affordable, and they need to know that it is much cheaper than rebuilding after a disaster.

To address this in each commune DW organises a wide variety of animation and awareness raising events and distributes products with a prevention message. Each activity – a play, a concert - deals in its own way with the risk of storms, the damage they cause and the action that one can take to reduce vulnerability, and these events are accompanied by information handouts and house-to-house visits with practical information. The animation activities has been undertaken in diversified forms which encourage the participation of different groups of people (children, youth and families) in each commune.

Many of the animation activities are designed to be “memorable” - events that one will recall maybe months or even years later. They include the organisation of concerts with local musicians, singers and poets, many of whom perform their own material written for the project. There are theatrical plays (some written and performed by project staff). The project provides songs and text used on commune loudspeaker systems, and it makes use of radio and TV.

In 2001 during a special “damage prevention week” a decorated old Renault bus toured each commune to distribute information and it handed out fans and hats with the project prevention message. In 2002 DW in some communes is sponsoring commune football matches as another publicity event .

The animation activities are an ongoing process with different events happening regularly in each commune.



### Working with schools

DW works with primary and secondary schools and kindergartens ; introducing the theme of preventive strengthening into school curricula with teacher training ; developing activities such as painting competitions with school children, and strengthening school buildings.

*Below: child's drawing of a strengthened house done in one of the project competitions*



### 2/ Developing the social and institutional environment that supports preventive strengthening - a

### **partnership between family groups and the Commune Damage Prevention Committees**

The process of raising awareness, of providing support and of taking action cannot be sustained without the engagement of both families in the community and the commune representatives. Each plays a key role in awareness raising and support. In the villages, families who have made their homes safer share the experience with neighbours, whilst the commune provides the framework to provide guidance, support and organise animation events.

This participation is the basis for the continuation of the project activities after external funding is ended, and DW has worked to formalise this local capacity to carry on the actions introduced by the project. To achieve this, at the level of hamlets DW encourages the development of family groups, bringing together all the people who are beneficiaries in the project and making beneficiary selection a democratic process.

In parallel DW has instigated the creation of Commune Damage Prevention Committees who provide the necessary support and animation to encourage and help village family groups to undertake vulnerability reduction activities.

#### ***Family groups for damage prevention***

In each targeted hamlet, beneficiary families are invited into a group to constitute a base for mutual support. They are involved in decisions about which families should have priority for support and credit, they provide support in the management of credit for house strengthening, and they participate in assessing what work needs to be done. Through experience gained with the project, these families become a focal point for sharing information and their experience. A group leader represents the views of the family group at commune level.

The project works with families to show how existing buildings can be strengthened simply and efficiently in a manner that is sympathetic to local tastes and visual preferences and this is important in developing local acceptance of techniques that can be used. Families always contribute both in kind and financially to the cost of strengthening.

The family group is central to the implementation of a family based vulnerability reduction process.

#### ***The Commune Damage Prevention Committees***

In each commune DW has collaborated with the People's Committees to establish a Commune Damage Prevention Committee (CDPC) who progressively take on responsibility for managing most of the project activities in their commune.

The CDPC brings together members of the People's committee, village representatives and local unions. DW develops the capacity of the CDPC with training and work sessions so that it can provide the necessary support, technical advice and follow up to family groups benefiting from subsidies and credit and in undertaking preventive strengthening. The CDPC is helped to organise animation and communication activities in the commune, and it is provided with prepared materials, such as cassettes and handouts (documents, posters, etc.) for their use.

Once established, the CDPC becomes the commune level extension of the project team, and in time takes over its activities. For example, the CDPC, in collaboration with the Farmers and Women's Unions, manage the house strengthening credit programme.

### **3/ Practical action and support : training, demonstration and finance**

Three complementary actions take place in each commune :

#### ***Training:***

DW runs training sessions for community representative and construction workers so that they can learn and discuss about the need to strengthen houses and public facilities, and get practice and technical training about the ways that this strengthening is done on different types of building.

The workshops discuss the issues of typhoon damage prevention, the practical theories and methods are suited to the locality; practical work on local buildings then demonstrates different techniques. Each participant receives a manual on cyclone resistant construction.

For many participants these workshops are the first time that they can discuss local building problems and issues with professionals. This is also important, in that each commune has its own styles and requirements, and few buildings are actually the same.

After the training course, evaluations have shown that the local builders are more confident about applying the new techniques. They are also ready to promote the principles of storm prevention in housing construction inside or outside the target communes.

**Demonstration:**

DW collaborates with individual families to strengthen their existing home. Each beneficiary house is surveyed, the weaknesses discussed and a contract drawn up detailing the work to be done to make the building safe and defining the contribution that will be made by the family and by the project. The project makes a subsidised contribution in the order of about 150 US\$ and since the beginning of 2002 the family has access to a credit fund to contribute to costs. The family covers all of the remaining costs, and, using trained skilled labour and their own help, manages the strengthening work.

DW also collaborates with the commune to strengthen small public buildings, including primary schools, kindergartens and markets, as these buildings provide additional exposure for the same techniques that can be used on homes.

No two buildings have the same strengthening needs, but typical actions include ensuring that all parts of the structure are solidly tied together, that the roof covering is securely held down with reinforced ribs or bars, that the building has strong doors and shutters and that walls are made more water and wind resistant.

**Credit:**

Although commune representatives were originally sceptical that people would contribute to and participate in the strengthening of their homes, the project has proved that not only are people very ready to participate in the process of strengthening, but that they will in addition borrow money in order to cover their contribution.

Household surveys have also shown that because no formal credit facility existed to pay for strengthening the home, families have had to go to informal moneylenders, who charge high repayment rates. DW concluded that this was causing hardship and that the project needed to demonstrate that a dedicated source of credit for house strengthening can work successfully: the result is that it does.

Credit programmes relate more commonly to income generation activities, but the indications are that strengthening the house is considered just as important an investment, and families have both been ready to borrow sums in the order of 100 to 150US\$ and make regular repayments (during 18 months) at 0,3% monthly interest.

The credit system is managed by the Commune Damage Prevention Committee in collaboration with the participation of the Women's or Farmers' Union. The target is to achieve loan rates up to 85% with a low level of subsidy, but as yet in the communes it is generally considered that until the poorer and most vulnerable families have been helped, a subsidy is needed to enable these families to strengthen their homes.

A longer term goal for DW is to see other organisations including credit banks take note that people do repay loans for house strengthening and that they will in turn provide similar credit opportunities.

### Who benefits?

The projects actions target poor and vulnerable families. But it has also been encouraging to see that women in particular have participated in the project's activities, and that 40% of the beneficiary families involved in house strengthening have been headed by women. Not only do women participate directly and efficiently in the animation and communication activities, but they have also shown themselves to key actors in bringing about change in the attitude of families so that prevention becomes a priority in housing improvement and construction.

The families who are directly helped by the project are selected by the community in a village. Some groups are more favoured, as those who have lost family members during the years of resistance, and single women heading families are also favoured. But beneficiaries also include families who are needy and likely to play a significant role in encouraging others to take preventive action to strengthen their house.

The case of Madam Phan Thi Yêm is quite typical.

#### Madame Phan Thi Yêm, village of Thanh Thuy Chanh, Thuy Thanh commune

Married at the age of 17, Madame Yêm assures us that this was not considered young at the time, but life was really hard – difficult to express how hard. To begin with, the young couple were farmers, and were able to feed and bring up their children. Then her husband went off in 1963 to fight in the Resistance. He was killed in May 1963 in a ghastly massacre. This was a terrible blow, leaving her with 5 young children, the eldest 13 and the youngest only 3 years old. With meagre savings from making straw hats, like others in the village, she was able to pay for her children to attend school. But once basic needs were met, she could only afford to live in a poorly maintained bamboo shelter. Using savings scraped together and with manual help from cousins and neighbours, in 1974 she managed to build a cement block house with a tin roof, but no reinforcement. Only to find herself homeless in 1985, when the typhoon ripped off all the roofing and she was forced to purchase fibro-cement sheets to replace it. "That's why when I hear a typhoon warning, I'm absolutely terrified," she adds.



Asked about strengthening houses against storm damage, she says she had heard about this and was most interested. Which is why when the village meeting to decide which families should benefit from the damage prevention project was held, Madame Yêm took an active part. In the event she met all the conditions for becoming a beneficiary. She assures us that if the project can make her a loan, she will do everything she can to help improve her house as required by the Project. Before strengthening, her house was built of cement blocks, with a tin roof and very rudimentary tin panel doors.

All her children are married and have work, but at some distance, except for her youngest daughter who still lives with her. So she hopes her house can be finished before the Têt [Vietnamese New Year] holiday so that she can celebrate with her neighbours. The total budget for the work is some 4 200 000 dôngs, of which Madame Yêm is contributing 200 000 dôngs, and the Project has agreed to loan her a further 1.5 million dôngs at an interest rate of 0.3% per month. She receives a State pension of 120 000 dôngs (as a Revolution widow) and this together with her income from raising animals will enable her to make the monthly repayments of 57 000 dôngs. Before, she used to borrow from the Women's Union for her farming activities, but until now no organisation used to provide loans for strengthening homes against storms. She is delighted with the new loan scheme and is determined to save and repay on time so that others can also benefit. At the time of writing, the walls of her house have been carefully rendered and eight iron reinforcements have been added to the roof, making it both attractive and strong!



the house of Madame Phan Thi Yêm in Thuy Thanh Commune

Greatly moved, Madame Yêm tells us that although her children have grown up now, none of them are in a position to help her. Thanks to the help she has received from the Project as well as from her cousins and neighbours, her house is now comfortable and strong. She is grateful to the project and hopes that others like her will be able to benefit..

## Conclusions

In 1999 when DW first proposed a strategy that is based on working in the community with families to strengthen existing homes in central Viet Nam, and with relatively small sums of money, many people were sceptical that this could either work or even be of any value.

Four years later, opinions are very different.

DW's team in Thua Thien Hué has been successful in developing a programme that is changing the attitudes and the practices of the different stakeholders in the community - families, technicians, and decision-makers - so that damage prevention in housing becomes a higher priority.

The diversity of the animation activities has encouraged the active involvement of both local authorities and the population; the beneficiary families are pleased and reassured by their strengthened homes; the community leaders fully understand the project's aims and are engaged in the process, and they recognise that by motivating people and mobilising relatively small sums of money a great deal can be achieved to strengthen houses and small public buildings.

They recognise too that with a safer home, families can turn their attention to meeting other priorities and needs with greater assurance.

*The scale of the project remains, however, small, covering, as it has, only ten communes in one province. The challenge in the coming years is to expand the example, to bring more help, both practically and financially to vulnerable families along the coast, and to work towards a much wider adoption of the strategy of preventive strengthening.*

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