

Proposal for mission to assess needs and propose actions related to the reconstruction/retrofitting to achieve safe houses and public buildings after Cyclone Nargis in Myanmar, and to develop a strategy of safe construction for the future.

Proposal prepared for Save the Children, Myanmar

Development Workshop France

June 2008

Development Workshop France (DWF) is an European NGO with specialist experience in cyclone and flood resistant construction in South East Asia, including both retrofitting existing buildings to make them flood and storm resistant, and in ensuring that reconstruction and future buildings respect the basic principles of cyclone and flood resistant construction. DW experience includes specialist skills in capacity building with communities for a safer built environment with more than 30 years work experience in Africa and Asia. DWF is an ECHO partner.

Cyclone resistant construction and reconstruction.

The underlying issue about construction in cyclone risk areas is that there are basic and essentially simple rules that need to be observed regardless of the choice of materials and technology being used. These need skill and knowledge to be interpreted into practical action on the ground; but people can be trained in one or two days to understand and apply these principles.

One can divide the causes of damage and destruction of buildings into three, often overlapping, reasons:

- The material used were too frail to resist the effects of the cyclone and no amount of design/technical modification would change this;
- The basic rules of cyclone and flood resistant construction were not respected (for example, lack of serious fixing to roof covering, lack of bracing..);
- The quality of workmanship and materials was bad – for example, reinforced concrete construction was not to an acceptable standard and failed. There are some materials, such as fibre roofing sheets, which will almost certainly fail in a cyclone.

Poor quality and poor detailing are the biggest issues. They require awareness raising, and training. Existing buildings can be retrofitted to make them safe in many cases.

Engineered and designed buildings can fail just as much as local traditional building techniques if the quality is bad. One should not by any means assume that modern technologies provide the best answer.

In Vietnam, DWF promotes the preventive strengthening of existing buildings based on the application of the ten key points of cyclone resistant construction. DWF also encourages the government and contractors to seriously apply these ten key points and good quality work to all new building. Bad workmanship is always a big cause of failure.

The proposed DWF mission

1. Review and identification mission which will provide the basis for preparing a detailed programme;

Proposed mission dates: early or mid july 2008

DW proposes a mission of two weeks to be undertaken by two members of the DWF team, John Norton (Team leader/director of DWF) and Mr Hung, engineer, DWF Vietnam Office.

The purpose of the mission is to gather detailed information in the field which will enable DW to:

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1. assess present and longer term needs and make a realistic assessment of difficulties,
2. define a programme for the design and implementation project to train and raise public awareness in safer housing and reconstruction.

During the mission the DW team will include the following:

- Meet with the SCF team:
- Meet with local partners/officials as defined by SCF, but with a focus on the construction sector.
- Visit areas where damage has taken place and visit buildings that did and did not survive the disaster.
- Make a preliminary assessment of the types of buildings that need to be rebuilt and with what construction materials and techniques in various localities. Assessment on the vulnerability of different building types and the steps that can be taken to reduce this future vulnerability.
- Assess communication and awareness raising options related to the key points of safe construction.

During the mission DW will discuss construction, training and animation options with the SCF team, so that by the end of the mission we have a clear joint vision of what needs to be and can be done, and this will define the content of the possible detailed programme proposal to be submitted by DW.

DW will present a draft proposal at the end of the mission, and will follow this up with a costed and detailed proposal.

Budget .

Item	Amount in Euros	Quantity	Total in Euros
Fees:			4000€
International Travel:			
1. Round trip : Toulouse/France – Myanmar – (Norton)	1 500€	1 round trip	1 500€
2. Hué/Viet Nam – Myanmar (Hung)	900€	1 round trip	900€
Per-diem Bangkok (Transit in and out)	50€	2 x 14 = 28 days	1 400€
Accommodation in Myanmar	<i>Organised and paid by SCF</i>		
Local travel in the Myanmar:	<i>Supplied and Paid directly by SCF</i>		0€
Interpretation in country:	<i>Supplied and Paid directly by SCF</i>		0€
		Sub total	7 800€
Administration and misc. costs.	7%		425€
		Total	8 225€



Developing local capacity to reduce vulnerability & poverty,

Central Viet Nam

Reducing vulnerability to climate change and natural calamities and working for poverty reduction are intimately linked issues in Central Viet Nam. Great progress has been made since the introduction of Doi Moi economic reforms, too many people still live below the poverty line. Comprehensive poverty reduction and growth are central goals in Viet Nam's 2001 – 2010 development strategy. But the problems people face are getting more complex and risk increases.

Creating a stable and safe environment in which people can live and work is fundamental to the development of communities and the region.

“The number of people who need emergency relief every year due to natural calamities ranges from 1 to 1.2 million.

On average, the number of households that fall below the poverty line again is large compared to the number of households that manage to escape from poverty. This is because a very large number of households live just above the poverty line and therefore are highly vulnerable to negative shocks such as natural disasters, job loss, sickness, and so on.

Analysis of the Household Living Standards Measurement Surveys in 1992/93 and 1997/98 indicate that households that suffer from frequent natural disasters are likely to fall into deep poverty. Consequently, efforts to identify effective measures to mitigate the consequences of natural calamities are an important component of poverty reduction.”

(Source: Viet Nam Comprehensive Poverty Reduction and Growth Strategy)

Development Workshop undertakes actions in Central Viet Nam that help families, communities, community leaders and civil society reduce vulnerability to climate change and natural disasters and develop the opportunities and the environment that contribute to poverty reduction.

- ***Preparing for the future: commune prevention action plans:*** DW works with families and with the people's committees to develop 5 year action plans for prevention, and works to strengthen the institutional capacity to develop action plans for vulnerability and poverty reduction and to be able to assist families. DW promotes democracy in the village decision making process to ensure equitable selection of partner families and a balanced gender approach.
- ***Developing skills:*** DW provides training to local building brigades in all the communes where it works, in order to improve the general quality of building and in order to develop skills in disaster resistant construction. Trained builders both work on local construction programmes that brings in revenue, and act as building advisers to families in the community.
- ***Making prevention a priority through participative animation:*** DW makes information exchange and animation about the need for prevention against disaster a priority, using popular media, theatre, concerts, into community boat races, mobile displays and school events – anything that will lodge the prevention idea in long term memories!
- ***Safe shelter:*** Since 1999 DW has implemented a programme for the preventive strengthening of existing houses in central Viet Nam. Roughly 70% of rural housing has been rebuilt by families since 1985, but the quality is poor and the result unable to resist the effects of storms and floods. DW helps families strengthen their existing home, at an average extra cost of 20% of the total value of their house. DW subsidises this up to 50%, the remaining costs are covered by family contributions. DW also assists families in building new houses, where the emphasis is ensuring that quality and application of safe flood and storm resistant construction techniques are respected.



- **Credit for safe and affordable houses:** Since 2001 DW has introduced a programme providing families with credit for house strengthening, repaid over 18 months. Families show they are keen to take this opportunity and are good at repayments. They recognise the social and economic value of a resistant safe home and the contribution it makes to family stability and growth. DW is developing partnerships with local banks. This action is partnered with the Vietnamese bank for Social Policy and the Ford Foundation.
- **Access to safe schools and infrastructure:** DW partners with communes in Thua Thien Hué to strengthen existing public infrastructure and build safe new schools, markets, health facilities. At village level, providing kindergartens helps small children access early education. DW works with schools to train teachers about disaster prevention, and runs workshops with children about their concerns. Children are active in school and in the community in promoting the vulnerability reduction message.



In all its actions, DW places an emphasis on communication, exchange and education based on active community participation. Animation activities in the communes encourage participation and the involvement of families.



Through the process of animation and demonstration grass roots and official attitudes are changing.

Development Workshop works in collaboration with the People's Committee of Thua Thien Hué province and the Flood and Storm Control Committee, the Thua Thien Hué Consulting & Designing Construction Company, Hué, and Commune authorities. DW's work builds on experience gained by DW in disaster and development related work in Viet Nam since 1989 on UNDP and Australian Aid supported projects in central and northern Viet Nam.

Support:

DW actions in Central Viet Nam are supported by the EC Humanitarian Aid Office (ECHO) (2003 – 2008) and by Canadian International Development Aid (CIDA) and the Foundation Aide Viet Nam Canada (1999 and 2003)

DW is a European NGO and has offices in France, various African countries, and the Viet Nam office in Hué, Thua Thien Hué province. DWF has a framework Partnership Agreement with EC Humanitarian Office, ECHO.

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Vietnam: Flood and Typhoon-resilient Homes through Cost-effective Retrofitting

“Vaccinate Your Home” - Preventive Action to Reduce Damage Caused by Floods and Typhoons in Vietnam. A Dipecho and ISDR good practice project.

Development Workshop France (DWF)

Abstract

Vietnam’s disaster risk reduction strategy pays insufficient attention to the capacity of families and local communities to play a key role. Top-down approaches need to mesh with community-based disaster risk reduction potential.

A Development Workshop France (DWF) programme efficiently demonstrates that communities can be a dynamic force in reducing risks directly related to local contexts, and that their potential can be mobilized through participatory commune-level disaster risk reduction planning, training and outreach and preventive strengthening of housing and public buildings.

The DWF Programme seeks to help reduce the impact of typhoons and floods on housing and public buildings; loss of housing being specifically a major family setback with repercussions on all other aspects of family life and development.

The Programme is practical, efficient and cost effective. Even though financial institutions have not taken up yet the idea of granting credit to people concerned, many families and communities immediately put their money into it after seeing its concrete and tangible results.

The Initiative

This initiative is a disaster reduction programme aiming to reduce the impact of typhoons and floods on housing; loss of housing being a major family setback with repercussions on all other aspects of family life and development.

The Programme kicked off in 1999 and is still continuing with further phases planned. Phases 1 and 2 were implemented from 1999 to 2003 funded by the Canadian International Development Agency (CIDA), and Phases 3, 4 and 5 supported by the European Community Humanitarian Office (ECHO) through its Disaster Preparedness programme known as DIPECHO (Disaster Preparedness, European Community Humanitarian Office). The current phase runs through to 2008

Implemented by Development Workshop France (DWF) in collaboration with the Thua Thien Hué Construction Consultants Stock Company, the Programme has been run in Thua Thien Hué (TTH) Province in Central Vietnam, involving over 100,000 people annually in awareness campaigns, including: commune, district and provincial people’s committees; some 600 teachers; 1,500 school children; and 550 builders. The programme targets every year some 4,000 direct beneficiaries, including some 250 families.

Goal and Objectives

The initiative has been launched because Vietnam’s disaster risk reduction strategy pays insufficient attention to the capacity of families and local communities to play a key role, suggesting that top-down approaches should mesh with community-based disaster risk reduction potential. The other reason for launching the initiative is to reduce the general impact of loss of housing caused by typhoons and floods.

Outcomes and Activities

Based on risk identification and the need to show how preventive action can reduce the identified risks, the Programme involves local and grassroots consultation and preventive action planning. Its central theme is to make families and the community active players in the process of reducing the vulnerability through the integration of storm resistant techniques in existing and future building. Demonstration and training have equally been key components of the Programme’s strategy.

DWF promotes the preventive strengthening of existing houses and public buildings based on ten essentially generic key principles of typhoon resistant construction, and encourages the application of these same principles to the construction of new buildings by both government and the private sector and in particular as part of the Vietnam Government’s “Temporary House Replacement” programmes, which

are designed to provide a more secure environment in which the extremely poor can improve their situation.

Each of the ten key points of typhoon resistant construction describes a principle that either reduces the risk of damage to the building structure or reduces the risk of loss of materials, such as roof covering. For example, the veranda roof (a high risk item) should be structurally separate from the main roof of the house. The connections between all individual parts of the structure, from the ground to the ridge, have to be strong. Doors and shutters should allow the building to be closed up. All parts of the roof and wall structure must be firmly connected. Roof sheets or tiles must be held or tied down. Trees should be planted to form wind breaks. The ten key 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. All but the frailest of houses can be strengthened.

Overall, the Programme shows that preventive strengthening of housing and public buildings is viable and cheap and effective. As hundreds of families have participated, the impact is now both popular – people now trust the approach – and official – provincial authorities have issued orders telling people to apply the DWF prevention approach. Last but not least, Typhoon Xangsang in 2006 clearly demonstrated that the DWF approach works.



The Good Practice

The DWF programme is a good practice because it is both practical and efficient. This is evidenced by the fact that families and communities immediately put their money into the DWF approach after seeing its concrete and tangible results.

One innovative aspect of the Programme is the key role of participatory communication actions that involve people from all levels in getting the prevention message across. Another innovation is the demonstrative value of showing how housing and public buildings can be made to resist disasters. The third innovation consists in showing that the whole process is economically viable.

A long-term success/failure factor of this initiative may be the fact that financial institutions have not taken up the idea of granting credit for preventive strengthening of houses, yet the idea has been well received by beneficiary families. This issue still has to be addressed. A possible link with disaster insurance should be explored.

Lessons Learned

The key lessons learnt from this initiative are:

- Once convinced, people and families are very prepared to commit their own funds to take preventive action to reduce the risk of loss or damage to their own homes;
- Community residents can give equal treatment to community facilities and public facilities as long as the “common good” dimension is perceived ; and
- Scepticism about the value of retrofitting houses has been replaced by confidence.

The major challenge is that government policies consider disaster risk reduction (DRR) in macro top-down terms and dismiss the capacity and needs of local communities and families. They do not perceive them as

possible key partners in DRR. As a result, national financial commitment does not cover local needs and families have to find their own resources.

Potential for Replication

Replicating this practice is easy. DWF has done so in Indonesia (Banda Aceh), and has a long history of training local builders to integrate disaster resistant construction techniques into building as far afield as Iran, Afghanistan and in the Republic of Guinea in Africa.

Some characteristics of the Programme are context specific, but the approach applied in this DWF Programme has been tested in other countries and it works in different contexts.

DWF in Indonesia

Indonesia: Developing the 'safe house' programme in Tsunami affected communities in Aceh Province, Indonesia

In the aftermath of the 26th December 2004 tsunami that hit Aceh Province, in March 2005 DWF was invited to provide assistance to the British Red Cross Society for the development of a community 'safe house' programme. After a fact finding mission in July 2005, work on developing the safe house programme started in September 2005 and continued in 2006. Over and above the interest in assisting the long term needs of families who suffered from the tsunami in 2004, this programme is of interest to DWF in that it provides a complementary test of skills and strategies developed by DWF in Viet Nam.

Key Data

- Location:** Aceh Province, Indonesia
- Duration:** 2005 – 2006
- Funding:** British Red Cross Society
- Beneficiaries:** Population in tsunami affected communities in Aceh Province
- Partners:** British Red Cross Society
- Sectors:** Disaster reduction, capacity development; awareness raising

Context

The assessment of damage caused by the tsunami showed that lack of application of basic principles of safe earthquake resistant design and construction, combined with poor quality workmanship were major contributory factors in increasing the vulnerability of houses and their occupants. The purpose of the DWF programme is to address not only the short term need to ensure good quality reconstruction but more importantly, to develop the conditions in which future

Langkah Mengawasi Pembangunan Rumah Anda

Hot Line ☎ 62 812 698992

1. KUALITAS PONDASI

- Apakah Pondasi berada cukup dalam (50-70 cm) pada tanah yang padat?
- Apakah ada dasar Pondasi (pasir dan beton) yang padat untuk menopang beban rumah?
- Kualitas batu yang baik?
 - Apakah bentuknya kasar dan tajam?
 - Adakah campuran yang sesuai dan dituangkan beton dengan baik?
- Apakah besi untuk kolom menonjol dari dalam pondasi sampai ke atas balok ikat bawah (deef)?

2. KUALITAS TIANG

- Pastikan Besi pengikat memengaruhi ujung-ujung yang telah dibongkakan dengan baik.
- Periksalah bahwa batang-batang besi itu tertutupi beton selanjutnya dengan baik (3-5 cm). Hal ini penting sekali dalam rangka kekuatan pada kolom tiang.
- Pengencoran kolom beton harus dibuktikan dengan paku-paku ketegangan dinding.

3. DINDING BATU BATA

- Bata-bata harus adukan semen harus:
 - Susunan bata harus beres dengan secara teratur dan lurus secara horizontal.
 - Adukan semen antar bata harus mempunyai tebal yang sama, antara 1 dan 1.5 cm (lebar tala jar).
 - Ukuran bata yang digunakan untuk seluruh dinding harus sama.
- Untuk memperkuat dinding batu bata diperlukan enggler.
 - Enggler panjangnya minimal 40 cm.
 - Enggler harus dipasang setiap 5 bata bata.
- DINDING KAYU Balok ikat Kayu
 - Pastikan bahwa kayu untuk seluruh rumah di sambungkan dengan besi, yaitu memiliki diagonal pengikat.
 - Corakan besi, plat logam pengikat sambungan yang baik untuk menahan tiang.

4. KUALITAS BUKAAN (PINTU DAN JENDELA)

- Jangan merancang pada ukuran yang sama dengan lainnya terlalu dekat. Jarak minimal yang disarankan adalah 50 cm.
- Pelangi diluar pintu dan jendela lebih baik terbuat dari beton bertulang, minimal 25 cm harus lebih panjang dari lebar balok dan menutupi seluruh tebal dinding.
- Bukaan yang langsung menempel pada kolom tiang struktural harus mempunyai pelangi yang menempel ke atas tiang di sampingnya.

5. KUALITAS BALOK IKAT

- Balok Pengikat beton
 - Sifat yang kuat.
 - Batang besi dalam beton harus selalu dibengkokkan disekitar sudut.
 - Tidak terputus!
 - Harus yakin bahwa batang besi bertulang minimal telah panjang 50 cm.
 - Hubungan yang kuat! Balok ikat harus harus benar-benar terikat pada pondasi dengan baik.
 - Batang besi Balok ikat harus memiliki tala besi penyangga. Batang besi kolom harus dibengkokkan masuk ke dalam keak-balok-ikat.
- Balok ikat Kayu
 - Sifat yang kuat!
 - Penutup pengikat diagonal harus dipasang pada balok-ikat atau jika rumah menggunakan rangka kayu.

6. KUALITAS ATAP

- Apakah kayu-kayu dibuat dengan bentuk seperti yang baik?
- Apakah kayu-kayu dihubungkan dengan balok-ikat atas dengan baik?
- Apakah antara kayu-kayu memiliki pengikat-pengikat dibagian tengah?
- dihubungkan dengan balok-ikat atas dengan kuat.
- Pengikat kayu-kayu

KUALITAS / KEAMANAN / KESELAMATAN
KESELAMATAN KELUARGA ANDA ADALAH TANGGUNG JAWAB ANDA AWASI PEMBANGUNAN RUMAH ANDA

building by communities will continue to be done in a safe manner after the NGO supported reconstruction period was over.

Principle objectives

- ensure that communities are aware of the need to adopt safe building principles,
- ensure that appropriate and safe construction knowledge and skills are available in or close to communities, now and in the future, using materials and products which can be obtained and used easily.

Actions

Safety Awareness: Public and special interest group awareness raising about the importance of safe house design and construction, and how this can be achieved using a variety of communication materials, developed initially in English and then in Indonesian.

Technical materials for capacity building and quality control: Designing the technical information and the structure of training sessions aimed at different beneficiary groups, in particular, local builders who will provide the future capacity in the community to build safely.

Team building: Recruiting and training a local team to manage the Safe House programme in 2006 and the future.

Development Workshop

Development Workshop was founded in 1973 in London. The DW office was established in France in 1985 – Development Workshop France (DWF). DWF has the status of an independent French non-profit association. DWF is a member of the group of DW organisations, including DW Canada, DW Mali and DW Burkina Faso and DW Angola and is a registered organisation in Viet Nam. DWF is an ECHO (European Commission Humanitarian Aid Office) partner.

DWF's aims are: —

- to contribute to the capacity of the community to provide for its basic needs, specifically in the context of human settlements: housing, construction, planning, upgrading, urbanisation, rural development, and related fields, with particular emphasis on developing countries;
- in connection therewith, to initiate and undertake any research, education, design, planning, project implementation and other activities related to the above issues.

DWF works to develop local capacities to improve the living conditions of the inhabitants of less-developed and threatened communities. It has a focus on the reduction of potential damage and the resolution of difficulties that result from environmental and demographic change and from man made and natural disasters.

DWF's activities cover shelter improvement, settlement upgrading, water supply and sanitation, small enterprise development and support, training to traders and artisans, and community mobilisation, all of which have particular emphases on developing countries.

We work above all within the context of war torn countries, of environmental deterioration, and of natural and man made hazards.

DWF contributes to the institutional strengthening of communities and organisations in order to improve their capacities to act themselves on development problems and opportunities.

In undertaking its activities, DWF...

- Works in partnership with local artisans and builders, community based organisations, local and national government, and international agencies.
- Contributes to resolving the conflicting pressures between sustainable environment resource management and meeting shelter and settlement needs with today's available resources and skills.
- Develops capacities for safe, achievable and affordable shelter and services in rural and urban areas using the resources that are locally and regionally available.
- Develops skills and local practices to reduce vulnerability and the impact of future disasters (such as cyclones, floods and earthquakes) on shelter.
- Actively promotes the development of local responsibility for programme management.
- Initiates and undertakes research, education, design, planning, project implementation and evaluation.

DWF is:

- Committed to long-term development - with programmes often developed over years with local partners in the community. It takes time to establish sustainable solutions.
- Mindful of the value of indigenous knowledge and expertise - Our programmes adapt traditional ways of working to new situations, requirements and to available resources. We always work in close collaboration with local people - stakeholders and experts - and local organisations.
- A leader in training community members, builders, NGO and government staff.
- Up-to-date with current research and training, maintaining close links to academic and professional-training institutions, ensuring that personnel are familiar with existing best practices and are able to share their own expertise through teaching and publication.

DWF subscribes to the following values:

Promoting social justice

Encouraging solidarity with vulnerable groups

Working with community on shelter and habitat issues in rural and urban areas

Encouraging good local government
Advocating for civic rights
Promoting innovative, sustainable, appropriate and efficient solutions and approaches
Working to alleviate poverty

30 years work training and associated production of training materials and course structure.

- Pre and post disaster capacity building in Viet Nam, Iran, Indonesia, Pakistan, Afghanistan, Guinea Conakry, Angola
- Capacity building for rural development in Niger, Burkina Faso, Mali, Mauritania, Namibia, Laos, and Angola

Awareness raising and community mobilisation

Thirty years of work in Iran, the Sahel countries of West Africa, Angola, and Kosovo and Viet Nam.

DW programmes have been recognised by the 'World habitat Award 1998, the UN Scroll of Honour 1992 and 1996 and Dubai Good Practice award in 1999. The work in Vietnam is frequently cited as a good practice and is short listed for the World Habitat Award in 2008. CV of mission team members

John NORTON

Date of Birth: 1 January 1949
Nationality: French & British (dual)
Civil Status: Married, 2 children
Residence: France

I/ Education

1972 Diploma of Architecture/RIBA II;
1970 – 1972 Architectural Association, London, UK
1966 – 1969 Portsmouth School of Architecture, UK

II/ Language Skills

English (mother tongue); French (bilingual); Portuguese (working); Arabic (basic).

III/ Present Position:

- President & Executive Director, **Development Workshop France** (French NGO)
Development Workshop France specialises in human settlements development problems in less developed countries. As co-founder, principle role in strategy and programme development, project organisation and implementation and management of interdisciplinary teams. Programmes and projects include disaster impact mitigation; rehabilitation and construction of communities, including public and private facilities; rural and urban planning; training at grass roots and professional levels; promotion of the use of local resources and skill development.
- Co-founder (1973) and Board Director, **Human Settlements Development Workshop** (Canadian non-profit corporation) working in the same broad areas as DWF.

IV/ Membership of Professional Bodies:

- Co-Chair, Sustainable Architecture Task Force, HABITAT II/Hassan Fathy Institute
- Architectural Association, London
- Development Studies Association, UK
- International Disaster Institute, UK

V/ Key Skills:

- Expert in human settlements planning and development;
- Disaster impact mitigation and preventive response planning for climate change;
- Environmental resources assessment and management;
- Extensive experience in strategy development, project organisation and implementation and management of interdisciplinary teams;
- Programmes and projects include rural and urban planning; training at grass roots and professional levels; disaster mitigation; promotion of the use of local resources and skill development; rehabilitation and construction of buildings, including passive climate features, health and education facilities; development of community animation programmes.
- Computer proficient; graphics and audio-visual presentation
- Architect.

VI/ Specific Country Experience

Asia: Vietnam, Laos, Bangladesh, India, Indonesia, Pakistan, Afghanistan.

Africa : Angola, Burkina Faso, Guinea, Mali, Mauritania, Niger, Namibia, Sudan, Tanzania, Tunisia, Comores, Sao Tomé.

Middle East : Egypt, Iran, Lebanon, Oman.

Eastern Europe : Kosovo, Cyprus.

VII/ Selected experience

2003 – 2008: *ECHO/3rd 4th & 5th Dipecho plan for S.E. Asia/ DWF* – Design and management of DWF project “Establishing community capacity to reduce the vulnerability of buildings and consequent economic loss caused by cyclones and floods in Central Viet Nam.

- 2005 - 2006: *British Red Cross Society*: Development of the safe house construction programme for long term community based construction in Aceh Province, Indonesia.
- 1997 – 2005: *Development Workshop Angola/Development Workshop France - EEC*: Development of comprehensive training package with supporting software for support to NGOs for public facility rehabilitation and reconstruction in Angola war zones.
- 1996 – 2005: *DW Angola* – Design and support for shelter rehabilitation programme in Angola
- 2003 – 2009: *DW France, EC, Danida & Dfid: Development and management of woodless construction programme in Burkina Faso*.
- 2000- 2002 * *ECHO & EAR - DWF/ACTED – Kosovo*: Shelter reconstruction programme evaluation in Vushtri and Mitrovica, and rehabilitation strategy development. Implementation of project.
- 1998-2002 * *CIDA/AFCV - DWF*: Mobilising popular capacity to prevent flood and storm damage to housing in Central Viet Nam
- 1997 *CCL : Laos* : Design of project headquarters at Phongsaly in northern Laos in a large multi building complex using locally appropriate materials including fired bricks, timber, tiles and roof sheeting.
- 1995 * *World Wide Fund for Nature: Tanzania*: Habitat and environment assessment, and identification of shelter options for Mafia Islands.
- 1995 - 2002 * *Danish Red Cross : Burkina Faso and Mali*: Design and introduction of "woodless construction" training and building component into DRC's environmental education programme.
- 1990 - * *Aga Khan Trust for Culture - Iran*: Development of an assistance strategy for earthquake mitigation programmes in Iran and adjacent countries.
- 1990 - 93 *UNCHS*: Coordination for "Appropriate Technologies in Construction for Rural Development" project in different provinces in northern Vietnam.
- 1990 - 91 * *UNCHS & Aidab*: Design and construction of improved sanitation and water supply, Than Hoa Province
- 1990 – 1992 * *Aga Khan Foundation: Pakistan*: Development and operation of Self Help Schools Research & Development Programme: aligning the school building programme with village needs and capacities; training and construction with community participation.
- 1989 * *CCSL/EEC/GRET : Laos*: Primary school using timber frame construction, wood roof shingles, and bamboo.
- 1989 * *Aga Khan Award for Architecture : Bangladesh*: Evaluation of Grameen Bank Housing Loans to Landless Rural Poor programme (1989 award winner).
- 1989 – 92 * *UNCHS/AIDAB : DW & Gret*: Quang Xong Hospital Reconstruction and training for cyclone resistant construction.
- 1989 – 91 * *UNDP/UNCHS*: Demonstration of storm-resistant building techniques in Binh Tri Thien province. Improvement of local ability to design and build storm-resistant community buildings and dwellings through training, construction of demonstration buildings and a national information campaign using appropriate audio-visual tools.
- 1989 - 90 * *Aga Khan Foundation & Aga Khan Housing Board Pakistan : Pakistan*: Gilgit area, strategy development programme to advise on rural planning, use of local materials, construction of public facilities, training needs in the context of earthquake risk and inaccessibility. In the Sind area, advice on environmental and sanitation design.
- 1988 * *UNCHS : Bangladesh*: Following severe 1988 floods, identification of key needs and appropriate assistance inputs in rural context. A programme to support existing financial and technical initiatives was devised and accepted.
- 1987 - 1988 * *World Bank/Senegal Ministry of Education: Senegal*: Field research and detailed planning for pilot rehabilitation programme (100 classrooms) and programme for national school maintenance with community help; development of computerised systems and manuals for these.
- 1986 - 89 * *Ministère des Affaires Etrangères/GRET : Laos*: Training and production of manuals on use and development of local resources for building and applications.
- 1984 - 85 * *USAID : Guinea*: Koumbia earthquake (1983) damage assessment; development and implementation of assistance programme aimed at long term building needs.
- 1977 - 78 * *CEDS : Iran*: Earthquake (Bandar Abbas & Zarand) damage evaluation and development of builders' training programmes for mobilising indigenous resources for local rehabilitation.

VIII/ Selected publications

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