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Research **Report**

Promoting Local Adaptive Capacity:

experiences from Africa and Asia

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Abbreviations

ACCRA	Africa Climate Change Resilience Association
AGRA	Alliance for Green Revolution in Africa
ADP	Area Development Programme
BLH	Indonesian Environment Agency
BPN	Indonesian Land Authority
CDKN	Climate Development and Knowledge Network
CDM	Clean Development Mechanism
CIMMYT	The International Maize and Wheat Improvement Centre
COVACA	Community Owned Vulnerability and Capacity Assessment
DFID	UK Department for International Development
DRR	Disaster Risk Reduction
DRRP	Disaster Risk Reduction Plan
FG	Farmer Group
GFDRR	Global Facility for Disaster Risk Reduction and Recovery
FMNR	Farmer Managed Natural Regeneration
FSP	Financial Service Provider
ICRAF	World Agroforestry Centre
ICRISAT	International Crops Research Institute for Semi Arid Tropics
IFRC	International Federation of the Red Cross and Red Crescent Societies
IPCC	Intergovernmental Panel on Climate Change
KIOF	Kenya Institute of Organic Farming
LAC	Local Adaptive Capacity
LCP	Local Capacities for Peace
MEF	Ministry of Economics and Finance (Cambodia)
NRM	Natural Resource Management
MLAP	Market Led Agriculture Project
ODI	Overseas Development Institute
TAPEM	Malaka Education Trust Fund (Indonesia)
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WRI	World Resources Institute

Glossary

Adaptive Capacity The combination of the strengths, attributes, and resources available to an individual, community, society, or organisation that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities (IPCC, SREX, 2012)

Climate Climate defined as the average weather, or as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. The classical period for averaging these variables is 30 years, as defined by the World Meteorological Organisation. The relevant quantities are most often surface variables such as temperature, precipitation and wind. Climate in a wider sense is the state, including a statistical description, of the climate system (IPCC, 2007).

Climate Change Climate change refers to a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings, or to persistent anthropogenic changes in the composition of the atmosphere or in land use (IPCC, 2007).

Climate Hazard The potential occurrence of a natural or human-induced physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources (IPCC SREX, 2012).

Climate Impacts Consequences of climate and climate change on natural and human systems such as sea level rise and desertification also referred to as 'sensitivity' in some climate change impacts and vulnerability assessments.

Conflict Sensitivity The use of "Conflict sensitivity" terminology has evolved from the "Do No Harm" concept in the late 1990s, and is based on the hypothesis that any initiative conducted in a conflict-affected area will interact with that conflict and such interaction will have consequences that may have positive and negative effects on that conflict.

Coping The use of available skills, resources, and opportunities to address, manage, and overcome adverseconditions, with the aim of achieving basic functioning in the short to medium terms (IPCC SREX, 2012)

Coping capacity The ability of people, organisations, and systems, using available skills, resources, and opportunities, to address, manage, and overcome adverse conditions (IPCC SREX, 2012)

Fragile contexts Fragile contexts are places where a government cannot or will not act on its responsibility to protect and fulfil the rights of the majority of the population, particularly the poor. Such responsibilities include; territorial control, security, public resource management, service delivery and livelihoods support. Fragility does not conform to state borders. Relatively stable states may encompass fragile regions. Conversely, fragile states can contain zones of stability.

Resilience The capacity of a system, community or society potentially exposed to hazards to adapt, by changing or resisting, *reaching and maintaining* an acceptable level of functioning and structure. It is the capacity of a community to grow through disasters, or "bounce-back *plus*". Resilience is determined in part by the degree to which the social system is capable of *organising* itself to increase its capacity for learning from past disasters for better future protection and to improve risk reduction measures (World Vision, 2010).

Scenario In relation to climate change a scenario is a plausible and often simplified description of how the future may develop, based on a coherent and internally consistent set of assumptions about the driving forces and key relationships. Scenarios may be derived from projections, but are often based on additional information from other sources, sometimes combined with a narrative storyline (IPCC, 2007).

Stress A stress includes low impact events, and seasonal factors, for example employment, prices, health.

Trends Livelihoods are affected by long-term trends. It is important to differentiate between trends that are likely to change as opposed to those that are likely to continue. Trends include: population growth, violent conflict, national and international economic growth, technology trends. It is also useful to note the difference between local and national and international trends.

Executive summary

Increased uncertainty

Uncertainty is increasingly proving to be a key feature of people's lives. For people living in developing countries, climate change is adding to an already complex system. For those living in fragile contexts, the changing hazards, shocks and, in some areas, endemic stress of violent conflict, has meant that the millennium development goals (MDGs) to date have not been achieved. World Vision's development programming aims to promote adaptive capacity in fragile contexts. Adaptive capacity is understood by World Vision, as "the ability of individuals and communities to anticipate, deal with and respond to change – both changing climate and development pressures – while maintaining (or improving) their wellbeing" (Levine et. al 2012). There are linkages between this concept and resilience. As adaptive capacity can be investigated at a local level, it offers a practical tool for thinking about resilience. Initial research (ibid 2011) suggests that improving adaptive capacity can also lead to improved resilience of a system.

As such, this research paper has taken the local adaptive capacity (LAC) framework as a starting point for analysing World Vision's programming. Seven case studies have been selected from across Africa and Asia (Cambodia, Ghana, Ethiopia, Indonesia, Kenya, Vietnam and East Africa) which represent a range of different interventions including: social protection; food security; disaster risk reduction and livelihoods in rural, urban and conflict contexts. The aim is to uncover lessons, challenges and recommendations for development programming to build local adaptive capacity and contribute to child wellbeing.

Findings from World Vision programming in Africa and Asia

Integration is important for local adaptive capacity

The most common feature to all case studies was a focus on asset base, through providing physical, natural and financial resources to support secure livelihoods. However, examples from Farmer Managed Natural Regeneration programme in Ghana and Ethiopia and the green house groups and seed banks through a livelihoods project in Nepal demonstrate that secure livelihoods not only depend on the existence of assets alone, but on the institutional environment which determines access to assets, and the knowledge people have to use assets to develop their adaptive capacity. Growing bamboo shoots in Vietnam highlight that providing assets without training and balancing medium-term investments with the short-term daily needs to survive are real challenges that need to be addressed .

Organisational change is needed to promote agency

Building local adaptive capacity through applying an integrated approach to development programming requires a change in a development organisation's approach. This involves working with communities to identify their needs and capacity, utilising new sources of information and developing programmes based around scenario planning. This way of working will present a challenge for many practitioners as they will need to be adequately supported with appropriate training and resources. A better understanding of existing programming approaches and methodologies, and how to use them for programme design, implementation, monitoring and evaluation is needed. This must be matched by organisational incentives that promote mainstreaming of integrated risk management, networking and coordination, and facilitation.

Children can be agents of change

World Vision needs to continue to learn how to include children's voices in vulnerability and capacity assessments, implementation and review processes. There is also a need to champion the inclusion of children in development to communities and donors. This will help to consider the long term benefits of development interventions. Local adaptive capacity cannot be properly achieved while children remain invisible within adult-focused development initiatives.

Partnerships are required from the outset of programme design

Building effective partnerships at different levels – local to regional - can help to support long-term resilience. Strengthening the linkages between communities and institutions and creating space for a flow of information and feedback loops may foster accountability.

Long-term benefit must be balanced with short-term survival

The tension between meeting the immediate needs of poor households and investing in a longer term vision of local adaptive capacity remains a challenge. In many of the case studies, few incentives exist to prioritise long-term sustainable development gains, and existing policies and institutions disproportionately reward short-term decision making. There is a need for incentives to support decisions that build resilience.

Innovation can be fostered by incentives and peer learning

People's ability to innovative in response to the challenges they face depends on other variables such as social acceptance, financial viability, information and knowledge, and institutional support. Therefore it is necessary to identify the forces which constrain innovation in any given context and remove the barriers so that innovative approaches can be supported. Successful adoption of innovation and changing people's behaviour or practices was encouraged through incentives and peer learning. The Africa Learning Event is a good example of facilitating this process. The event provided an opportunity for different organisations and suppliers to have a space to share their learning and different technologies with World Vision staff from across the region with the aim of brokering new relationships for future development programming.

People's own agency is essential to make informed decisions

Building resilience hinges on developing the agency and capacity of marginalised people to overcome the range of challenges they face and determine their own future. Building local adaptive capacity is not simply about delivering infrastructure or technology, but is about expanding people's range of choices as well as access and influence over institutions and decision-making processes. Many of the case studies in this paper show how World Vision is focusing on building the ability of marginalised people to make informed decisions about adapting to future circumstances. However, the challenge remains in turning information into knowledge and supporting people's ability to use information for behaviour change.

Developing adaptive capacity can support the Child Well Being Outcomes

In the case of the projects in Indonesia and Vietnam, developing the knowledge and information of children of sound environmental practices and disaster preparedness through schools-based programmes, contributes to their safety and protection. However, in the case of Ethiopia and Ghana, the innovative FMNR approach may require educational elements in programming to improve child nutrition. Building local adaptive capacity does not necessarily translate into increased child wellbeing and attention to the linkages needs to be made more explicit in programme design and implementation.

Climate information must be integrated for medium to long-term decision making

Building local adaptive capacity is about developing medium to long-term strategies which take into account climate knowledge and uncertainty around possible impacts. Without integrating climate information into scenario planning, short-term development approaches will continue to be implemented, leading to the potential for ill-informed planning or long-term increases in vulnerability.

Need to work in fragile contexts and incorporate conflict sensitivity in programming

Better understanding is needed on how to build adaptive capacity in fragile contexts and how to incorporate conflict sensitivity into an integrated programming approach. Embedding conflict sensitivity will require a greater focus on context and needs analysis to ensure that all relevant components are built into the programming cycle from the outset to ensure appropriate timing of specific interventions. In addition to context analysis and conflict sensitivity, promoting adaptive capacity in fragile contexts requires working in partnership with traditional governance structures and community-based organisations. Empowering local organisations and authorities to promote agency means relinquishing control and facilitating a participatory process of development.

Recommendations:

Based on the findings, a set of recommendations for future policy and programming include:

- ***Promote an integrated approach.*** Maintaining an integrated approach in development, especially in areas while there is high risk, is needed to build local adaptive capacity. As the cases illustrate, promoting adaptive capacity at the local level requires a combination of the five different elements. Designing, implementing and reviewing development with the five elements in mind is a challenge and requires working in partnership and organisational change.

- ***Incentivise organisational change.*** Prioritising local adaptive capacity through development requires buy in from high-level decision makers in development organisations as well as from donors to support the organisational change process. A shift from compliance to building agency of practitioners and community members is needed. This calls for a shift in organisational approach of delivery to facilitation.

- ***Champion children's agency:*** More also needs to be done to mainstream building children's agency across all programme interventions. This requires focusing on children's roles in programme design, implementation and review. In promoting local adaptive capacity, it is the children who are going to see further changes to their ecosystem, increased shocks and stresses. By including future generations in current development programming and policy, the importance of long-term benefits can be held in focus against the need for short-term gains.

- ***Promote a culture of learning and innovation:*** Facilitating the exchange of information between development practitioners, research institutions, government and the private sector as well as promoting peer learning exchanges between successful programmes should be encouraged in order to share best practice and access to information and networks. In supporting the value of learning elements of adaptive capacity, such as using information, decision making and innovation, will be strengthened.

- ***Instil flexibility and scenario planning and use climate and socio-economic information:*** Building adaptive capacity is not just about being able to respond positively to anticipated and known risks and vulnerabilities, or existing shocks and stresses, but is also about being able to address uncertainties in the future. A greater emphasis on scenario planning in future development interventions is necessary to deal with uncertainty. Access to timely and relevant information, including climate projections and community perceptions of weather trends and variability, must be facilitated and influence programme design.

- ***Be conflict sensitive:*** At a minimum, conflict sensitivity is required across all development programming and must be included in the design, implementation and review. This requires ongoing context analysis, scenario planning, and facilitation between a range of stakeholders. Promoting local adaptive capacity involves working with existing institutional structures and promoting entitlements. It cannot be power neutral and must recognise changing power dynamics.

- ***M&E should be for cost benefit as well as local behaviour change:*** Identifying appropriate indicators for local adaptive capacity is a new challenge. Developing indicators for effective learning should be developed in a participatory manner. Furthermore, short-term and long-term timeframes must be considered in order to effectively learn how to build local adaptive capacity, as well as demonstrate the social and economic value of such an integrated approach. The type of information needed for behaviour change and innovation at the local level may not be the same type of information needed for cost benefit which is required for donors. A balance between the two is needed.

- ***Explore further the links between resilience and adaptive capacity:*** Adaptive capacity and resilience share many of the same characteristics but have conceptual differences. More action research is needed which explores both concepts in practice. Furthermore additional analysis is required to understand how supporting local adaptive capacity and resilience in fragile context differs from non-violent and stable states.

- ***Investigate adaptive capacity in urban areas:*** Aside from the case study from Indonesia, all the other case studies presented in this paper are focusing on building the adaptive capacity of people living in rural agricultural areas. However, with increasing urbanisation and the pressure of a growing population and informal settlements, urban areas are experiencing increasing levels of risks and hazards. More research is required on how adaptive capacity and resilience can be effectively promoted in urban areas.

Mutai, Seven-years-old, Kenya. ©2012 Lucy Murunga/World Vision

1. Introduction

According to the World Bank 2011 report, one-and-a-half billion people live in areas affected by fragility, conflict, or large-scale violence. Despite some progress made in the Millennium Development Goals (MDG), mainly on child education and mortality, the reality is that many people are still living in poverty. Those who live in a fragile or conflict-affected state have not seen a single one of the MDGs achieved. Violence and changing risks are impeding development. We face increasing risks due to: violence; political instability; food shortages; extreme volatility in energy and agricultural prices; and increased frequency and intensity of climate-related hazards. With climate change, shifting weather patterns are increasing uncertainty and eroding resilience. We must learn to live with uncertainty and deal with a variety of changing risks we face now and are set to face in the future in order to protect and build resilience in fragile contexts[1]. Currently, marginalised groups such as women, people with disabilities, the elderly and minority ethnic groups are most affected by disasters, and increasingly poor households are those that are living within fragile contexts (WDR 2011).

This paper presents a series of practical examples of how World Vision's programmes are helping to build local adaptive capacity to a range of shocks, stresses and trends such as: conflict, drought, floods and environmental decline. The Local Adaptive Capacity (LAC) framework, developed by the African Climate Change Resilience Alliance (ACCRA) of which World Vision is a core member, has been applied to analyse the challenges and successes of developing local adaptive capacity. Seven case studies have been chosen from across Africa and Asia to uncover lessons, challenges and recommendations for development programming in order to support local adaptive capacity and child wellbeing.

1.1 The Challenge

Over 20 percent of the world's population live in states which are considered to be fragile and highly vulnerable to a range of shocks (WDR, 2011). Meanwhile global economic and financial systems remain volatile and armed violence and criminal networks pose a growing threat to humanity in many countries. Our planet is under immense pressure as climate related disasters increase in scale and frequency. 5.2 million hectares of forest are lost each year, 85 percent of all fish stocks are over exploited, depleted or recovering, most habitats are in decline, and the rate of extinction is accelerating putting pressure on the people whose livelihoods depend on these natural resources. While pressure on land use is highly unlikely to be reduced as the world's population increases from seven billion to almost nine billion by 2040 (UN Secretary General High level panel, 2012). Inequality between rich and poor is increasing, the number of undernourished people has increased by 20 billion since 2000 and more than one billion people continue to live in poverty (ibid, 2012). The case studies below illustrate these challenges and World Vision's response to these through programming which builds local adaptive capacity and child wellbeing.

1.2 What is adaptive capacity?

Communities are considered to have high adaptive capacity when they are able to anticipate, deal with, and respond to changing climate and development pressures, while maintaining (or even improving) their wellbeing. The research through the Africa Climate Change Resilience Alliance (ACCRA) (Box 1) focused on elements that it considered to contribute to the adaptive capacity of a system in a particular context (Levine et al, 2012).

The five characteristics of the Local Adaptive Capacity framework include:

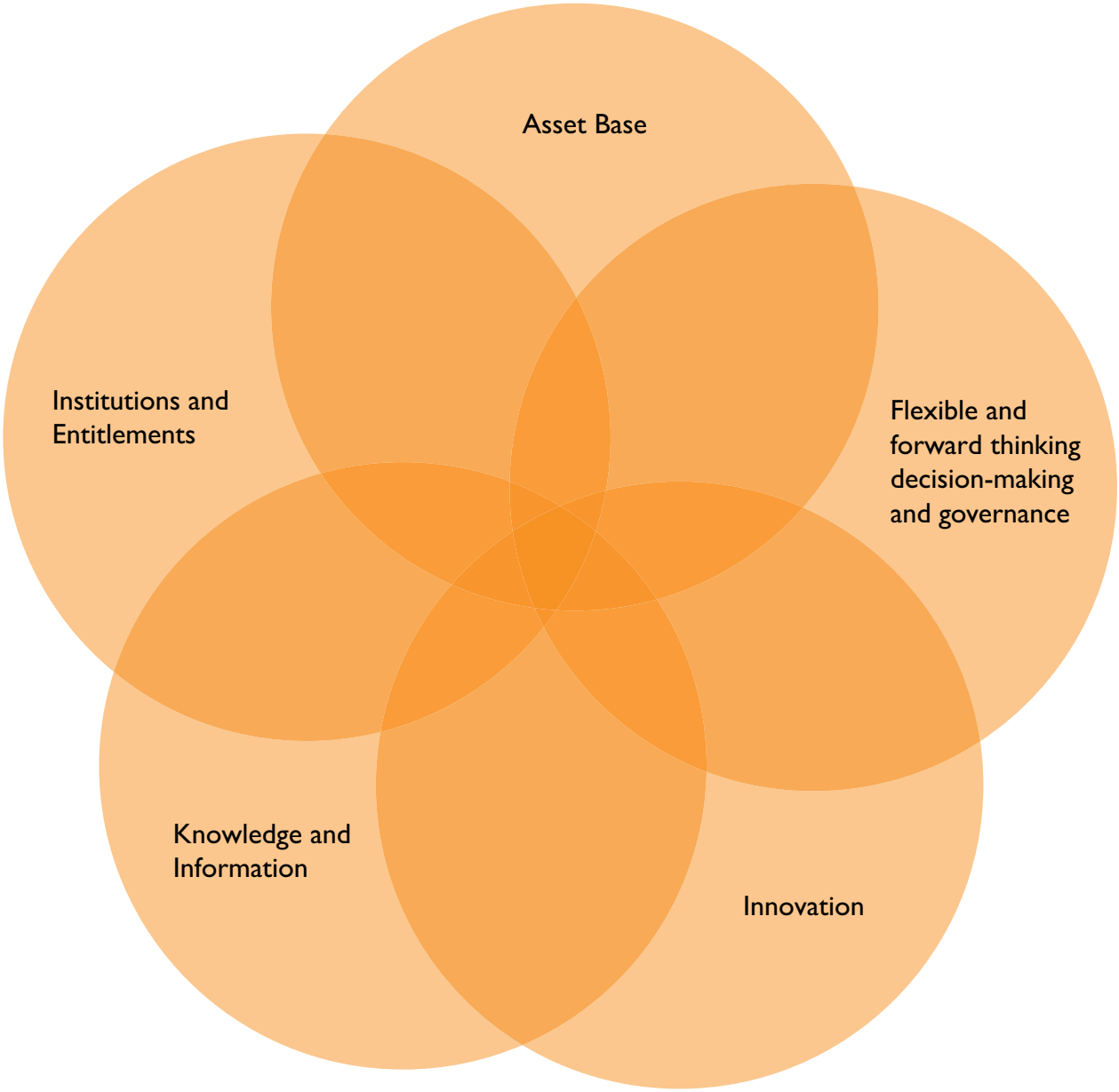
1. The asset base: availability of key assets that allow the system to respond to evolving circumstances
2. Institutions and Entitlements: existence of an appropriate and evolving institutional environment that allows fair access and entitlement to key assets

[1]Fragile Contexts – our definition
When we talk about fragile contexts we mean places where a government cannot or will not act on its responsibility to protect and fulfil the rights of the majority of the population, particularly those who are marginalised. Such responsibilities include: territorial control, security, public resource management, service delivery and livelihoods support. Ultimately, basic accountability relationships between governments and citizens are weak or broken. Fragility does not conform to state borders. Relatively stable states may encompass fragile regions. Conversely, fragile states can contain zones of stability. Fragile areas can also overlap two or more states.

3. Knowledge and information: The system has the ability to collect, analyse and disseminate knowledge and information in support of adaptive activities
4. Innovation: the system creates an enabling environment to foster innovation, experimentation and the ability to explore niche solutions in order to take advantage of new opportunities
5. Flexible forward-looking decision-making: the system is able to anticipate, incorporate and respond to changes with regard to its governance structures and future planning.

Most assessments of adaptive capacity to date have focused on assets and capital as indicators at the community level. While these play a role in identifying what resources people have or need to adapt, asset approaches do not give adequate attention to the role of processes and functions. Understanding adaptive capacity also involves understanding processes like decision making and governance, the fostering of innovation, experimentation and opportunity exploitation, as well as the structure of institutions and entitlements. In short the Local Adaptive Capacity (LAC) framework encourages attention to not only what a system *has*, but what a system *does* in order to allow it to adapt (Levine et al, 2011). The assumption, however, is that positive impacts on these five distinct, yet interrelated characteristics, of the LAC framework should enhance adaptive capacity at the local level while also contributing to capacity of the wider system.

Figure 1: Local Adaptive Capacity framework



The Africa Climate Change Resilience Alliance (ACCRA).

ACCRA is a consortium which was established in 2009 involving Oxfam GB, the Overseas Development Institute (ODI), Care International, Save the Children Alliance and World Vision. ACCRA's aim is to understand how development interventions – whether in the form of Disaster Risk Reduction (DRR), social protection or livelihoods programmes – are contributing to adaptive capacity at the community level and to increase the governments' and development actors' use of evidence in designing and implementing development interventions.

ACCRA has developed a framework (Figure 1) for understanding and assessing adaptive capacity at the local level which builds on existing work, such as DFID's Sustainable Livelihoods framework and the World Resources Institute's (WRI) National Adaptive Capacity framework as well as experience from development programmes in Africa. The research sought to investigate dimensions that are considered to contribute to the adaptive capacity of a system in a particular context.

1.3 Resilience

Alongside the concept of local adaptive capacity is resilience. Although the two concepts are highly linked, they are not synonymous with each other.

World Vision's working definition of resilience is:

> The *capacity* of a system, community or society potentially exposed to hazards *to adapt*, by changing or resisting, *reaching and maintaining* an acceptable level of functioning and structure. It is the capacity of a community to grow through disasters, or "bounce-back *plus*". Resilience is determined in part by the degree to which the social system is capable of *organising* itself to increase its capacity for learning from past disasters for better future protection and to improve risk reduction measures (2010).

Characteristics of resilience have been teased out from the socio-ecological resilience literature (Aditya et al., 2010) and have been debated within non-governmental organisations who seek to apply the concept to improve their development programming (Interagency working group, 2012).

According to an inter-agency working group, a significant part of resilience is that it brings the notion of dynamic change, risk, uncertainty and options into development planning and implementation, alongside rights, needs and vulnerability. This enables programmes and interventions to be developed differently according to risk and vulnerability analysis; and to be ready to address known risks and vulnerabilities but also develop contingencies for uncertain futures. This approach encourages people to be ready for change, and is underpinned by the ability to undertake comprehensive monitoring and analysis, and to actively learn (IRWG, 2012, p. 5-6,). It is clear that the concept of resilience and identifying its characteristics is evolving from a range of disciplines (Aditya et al, 2010) and is emerging as an issue at the heart of the development agenda (DFID, 2011; European Commission 2011; USAID, 2011; GFDRR, 2011; UNDP 2012). However, the concept poses a challenge for programming as a common definition is difficult to agree upon (Mitchell and Harris, 2012).

The Child Well-Being Outcomes (below)

Provide a practical definition of the understanding of World Vision of the well being of children. World Vision's active contribution to specific well-being outcomes varies from context to context as the following case studies will show, but the definition remains holistic and recognises that these outcomes reinforce each other.

1.4 The Relationship between resilience and local adaptive capacity

Although resilience and local adaptive capacity have conceptual differences they share many of the same characteristics. As such adaptive capacity offers a practical tool for thinking about resilience, given that it is able to be applied at a local level. Initial research suggests that improving adaptive capacity at the local level will also lead to improved resilience of a system (Levine et al., 2011). In this research paper, we will concentrate on how World Vision's development programming is building local adaptive capacity, the gaps, and opportunities as well as identifying how it can feed into achieving World Vision's Child Well-Being Outcomes (Box 2).

Goal	**Sustained well-being of children within families and communities, especially the most vulnerable**			
Aspirations	**Girls and Boys:**			
Outcomes	**Enjoy good health**	**Are educated for life**	**Experience love of God and their neighbours**	**Are cared for, protected and participating**
	Children are well nourished	Children read, write, and use numeracy skills	Children grow in their awareness and experience of God's love in an environment that recognises their freedom	Children cared for in a loving, safe, family and community environment with safe places to play
	Children protected from infection, disease, and injury	Children make good judgements, can protect themselves, manage emotions, and communicate ideas	Children enjoy positive relationships with peers, family, and community members	Parents or caregivers provide well for their children
	Children and their caregivers access essential health services	Adolescents ready for economic opportunity	Children value and care for others and their environment	Children celebrated and registered at birth
		Children access and complete basic education	Children have hope and vision for the future	Children are respected participants in decisions that affect their lives
Foundational Principles	Children are citizens and their rights and dignity are upheld (including girls and boys of all religions and ethnicities, any HIV status, and those with disabilities)			

2. Methodology: Reviewing World Vision's programming against the Local Adaptive Capacity framework

Putting the emerging understanding of resilience into action remains a challenge (see Section 1.3). Therefore it makes sense for support in building resilience to look to and start from the local level, where people are already developing the capacity to adapt to a complex array of risks and vulnerabilities.

The seven case studies (Table 1) from World Vision's development programming will be analysed against the Local Adaptive Capacity (LAC) framework. Each case study highlights the various characteristics of the LAC framework which have been reflected in the programme interventions. However it is worth noting from the outset that none of these projects were originally developed with the LAC framework in mind as the LAC framework was developed after these programme interventions, therefore most of them do not reflect all five characteristics of the framework. The gaps identified highlight where World Vision's programming can be improved upon.

This review is not an evaluation of World Vision's programming but a reflective exercise to begin to develop programming which from the outset seeks to build both local adaptive capacity and contribute to child wellbeing.

Table 1: World Vision's Programme case studies

Case Study	Project name	Country	Main sector	Characteristics and elements from the combined framework reflected
1	Farmer Managed Natural Regeneration	Ghana and Ethiopia	Agriculture/ Livelihoods	Asset Base Institutions and entitlements Knowledge and information Innovation Flexible decision making
2	Adapting to increasing climate change vulnerability in central coastal provinces	Vietnam	DRR/Livelihoods	Knowledge and information Flexible decision making Asset base
3	Financial Services	Cambodia and Tanzania	Social Protection	Innovation Asset base
4	North Rift Valley Food Security	Kenya	Food security/ livelihoods	Knowledge and information Institutions and entitlements Asset base
5	Integrating climate change adaptation into community projects	Nepal	Livelihoods	Knowledge and information Innovation Asset base
6	Integrating DRR into development planning	Indonesia	DRR	Knowledge and information Flexible decision making Innovation Asset base
7	Africa Food Security, Climate Change and Economic Development learning event	East Africa	Livelihoods/ Food security	Knowledge and information Flexible decision making Asset base

3. Local adaptive capacity – case studies from Africa and Asia

The case studies presented in this paper represent a series of practical examples of World Vision's development projects and approaches which are helping to promote local adaptive capacity to shocks, stresses, and trends (such as: conflict, drought, floods, rising food prices and environmental decline) through applying an integrated approach to development. The successes and challenges of different interventions will be discussed with recommendations to improve development programming.

3.1 Farmer Managed Natural Regeneration in Ethiopia and Ghana – case study one

Unsustainable land management practices in parts of Ethiopia and Ghana are having a devastating impact on the natural environment and on the food security of the people whose livelihoods depend on the land. Deforestation, soil erosion, over grazing and forest fires are affecting land productivity and the availability of forest products and animals on which many marginalised rural communities rely. Farmer Managed Natural Regeneration (FMNR) is an approach which is being introduced by World Vision to transform the land management practices of the local communities in the Humbo and Talensi areas of Ethiopia and Ghana respectively. The aim of this approach is to regenerate areas of degraded lands and ensure sustainable food and livelihood security for people living in the area, through the systematic regeneration of trees from living tree roots, stumps and seeds by selectively pruning stems.

Promoting local adaptive capacity

Asset base

In order to gain acceptance from the local community for carrying out the FMNR approach it was important to ensure that they continued to have access to alternative natural assets to replace the ones which they were obtaining via unsustainable methods. For example the FMNR approach encourages the use of pruning branches from fast growing timber for fuel wood rather than cutting down whole trees for the production of charcoal. The communities in Ghana were also incentivised to change their behaviour through prizes offered by the local government such as donkey carts, ploughs and bicycles for the best 'environmentally friendly' community. In addition, any community which was bushfire-free for three years would be eligible for a development scheme of their choice whether it be school, water supply, electricity or health clinic. It is important to note however, that over time, the greatest incentives were the direct benefits from reforestation themselves (wood, fodder, fruits, environmental services such as reduced erosion, wind speed and temperatures, return of wildlife and recharged groundwater sources). In fact, in Niger where FMNR is now practiced on more than five million hectares, adoption occurred largely beyond the influence of any project or external incentives.

In both Ghana and Ethiopia the communities practising FMNR have been linked to financial saving mechanisms. In Ethiopia decisions regarding the use of the revenues which flow from the carbon credits generated by project under the Clean Development Mechanism (CDM) are made by the cooperatives. A series of financial safeguards were put in place to ensure that the cooperatives receive the revenues assigned to them, including external auditing of bank accounts through which the carbon revenues flow. Thanks to their legal status, the cooperatives are also entitled to all forest products, including timber, firewood, fodder, wild fruits, honey and indigenous medicines. Having access to this source of natural and financial assets empowers the community to take advantage of opportunities to build their adaptive capacity and therefore contribute to the prevention or reduction of the negative impact of shocks and stresses. The communities in Humbo in Ethiopia have prioritised several areas for investment using the revenues from the carbon credits including construction of a grain store and flour mill and providing micro-credit for livestock and trade.

Institutions and Entitlements

For FMNR approaches to be successful they depend on the support of the local community to adopt such practices. This in turn requires both appropriate institutions governing access to land and resources and the ability to change deeply held beliefs and behaviour. To deal with some of these issues, World Vision set up

committees and cooperatives as organisational structures to manage the FMNR project areas with technical support from World Vision. In Ghana this involved establishing committees with equal numbers of men and women to be trained in the approach and then to lead other members of the community to adopt the practice. In Ethiopia, seven cooperatives were created with membership open to all interested community members.

The formation of cooperatives and committees has aided with the formalisation of land tenure agreements. The cooperatives in Ethiopia are recognised under Ethiopian law and granted land-use rights in the project areas. In Ghana where the nine communities involved are practising FMNR primarily on communal land, land use guidelines were prepared with community based bylaws being jointly devised which enable communities to manage the forest themselves with the support from the District Assembly. The establishment of formal land use rights has been particularly important in Ethiopia as the project is eligible for carbon credits. All the cooperatives have been signed to transfer the carbon trading rights from the cooperatives to the project entities. This was important in terms of ownership and entitlement to resources from the project.

Innovation

FMNR represents an innovative approach to land management practices and as is often the case with new ideas, had to overcome a dominant culture that didn't believe that such approaches would work before it was successfully adopted. One of the keys to the successful uptake of innovation is understanding how to ease constraints preventing the spread of good ideas and this is exactly what the project did. By setting in place the appropriate institutional framework (cooperatives, land use agreements etc) and enabling farmers to witness the benefits of such an approach through peer learning exchanges, the community were keen to copy this innovative approach.

Flexible forward thinking decision making and governance

World Vision gained the support of the local government, traditional chiefs and land custodians first which was critical to gaining the widespread support of the community. Ensuring good governance and improving traditional governance structures for environmental protection has been a strong feature of the project. In Ethiopia, this has lead the Government to consider mainstreaming carbon finance into its sustainable land management programme as a new model of sustainability and declare a target of replicating the FMNR model on 15 million hectares of land.

Knowledge and information

Promoting FMNR involved informing and educating people about the impact of their current practices on the quality of the natural resources in the area through radio messages and training sessions for the farmer committees and cooperatives. However it was also important that people were able to perceive the changes themselves and not just be told about them. The communities had spent substantial time and money in the past on tree planting which had not delivered results, which meant that to begin with, there was a lack of belief that adopting yet another approach would work. Twenty farmers from Ghana went on a field trip to Burkina Faso to learn from their counter-parts on re-greening initiatives. This form of peer-to-peer learning was particularly effective and was instrumental to the success of the project in Talensi. The project in Ghana also had to deal with challenging the deeply-held belief that bush fires were an inevitable occurrence during the dry season and nothing could be done to prevent them. Fire prevention training helped people to understand that this was not the case, and equipped them with the knowledge and skills to prevent the incidence and spread of fire in the future.

Both projects, in Ethiopia and Ghana, have linked farmers with agricultural extension workers, research services such as the Forest Research Institute, and Government departments such as the Natural Disaster Management Organisation, Ministry of Food and Agriculture, and the Education service. This should result in an effective flow of relevant information between local institutions and communities ensuring that farmer committees and cooperatives are aware of potential climate impacts and can make informed decisions. This is key to developing adaptive capacity and supporting appropriate adaptation strategies at the local level.

Above: Before the Humbo Community Managed Forestry Project the land in Atlaye's community was affected by flooding and erosion. Today it is a very different story, as you can see Atlaye happily ploughing the land.

Project successes and challenges

The FMNR approach has resulted in increased agricultural production[2] and income levels of farmers in both the Talensi and Humbo regions of Ghana and Ethiopia. In the Talensi region of Ghana approximately 125 hectares of marginalised and degraded lands is being restored through tree regeneration with stumps and seeds in the soil and through protection from bush fire. In Humbo in Ethiopia, the project is successfully regenerating 2,728 hectares of land. This has resulted in better soil quality, protection of fragile water catchment areas, production of sustainable firewood and fodder, and wild fruits and wildlife becoming available again. In addition, the Humbo project in Ethiopia is predicted to sequester 880,000 metric tonnes of carbon over 30 years which has enabled it to become the first large scale Africa Aforestation/Reforestation Clean Development Mechanism (CDM) project registered.

Overcoming deeply held attitudes and behaviours in relation to the natural environment was a challenge. Past failures to restore the environment through tree planting initiatives originally had an impact on people's belief in the ability of FMNR to reverse environmental degradation and for farmers from Ghana, seeing the benefits through a peer learning exchange to Burkina Faso was key. As a result of the FMNR approach, people feel confident that they are not helpless victims of climate change and desertification, but that they can do something to reverse the environmental degradation surrounding them and create a better future for themselves and their children. Children's wellbeing has been improved through not having to walk for long distances away from their homes to find fruits and food to eat, allowing them to spend more time at school or studying. Children's health may have also improved through increased food and livelihood security and children themselves have been included in the project through school programmes which focus on environmental education.

[2]In both these cases, FMNR is being practiced on non-agricultural communal grazing land. On these sites, increased agricultural production has mainly been in the form of increased livestock production due to increased availability of fodder. Additionally, honey, wild foods and firewood are being harvested on what had previously been bare land. Where FMNR is practiced on crop land, there is strong evidence that crop yields have increased and crops can have greater resilience against total failure in adverse years.

3.2 Adapting to increasing climate change vulnerability in central coastal provinces of Vietnam – case study two

The Vietnamese Government has made impressive gains in lifting millions of its citizens out of poverty over the past few decades. However, these gains risk being eroded by the impact of climate change, which threatens the country's 3,000km long coastline and extensive low-lying river deltas (UNDP: 2011). Sea level rise and saltwater inundation represent a significant long-term threat to the production of rice and aquaculture on which many people's livelihoods depend. Added to these long-term fears are the more immediate threats of extreme events such as typhoons which are increasing in severity, and floods which are becoming more frequent (SREX, 2012). In 2007 The Government of Vietnam approved a National Strategy for Natural Disaster Prevention, Response and Mitigation to 2020. While this framework provides a viable system for managing national climate change response and reducing the impact of disasters, it is still in its infancy and is struggling to be translated into implementation at the local level.

In 2005, World Vision started working in the central coastal province of Quang Ngai, where communities have been experiencing significant difficulties in recovering from disasters. World Vision is focused on reducing people's vulnerability to disasters through applying an integrated approach to disaster risk and climate change adaptation. This approach involves: focusing on generating alternative livelihoods, building safe homes and infrastructure, developing disaster risk reduction plans and educating children in disaster preparedness in order to respond to the full range of needs within communities.

Promoting local adaptive capacity

Asset base

This project focused on improving the range of assets that the local community have access to in order to build their resilience to withstand the impact of natural disasters and climate extremes. 43 small and medium sized infrastructure facilities were constructed in 37 hamlets. This included raising and concreting soil roads so that people could travel more easily and efficiently during the wet season and raising school yards so that children could avoid contacting disease caused by frequent contact with contaminated water. 1,003 households from 49 hamlets also received loans from revolving funds which enabled people to make investments to improve the construction of their homes making them more resilient to the impact of floods or typhoons.

The project also focused on creating alternative income-generation opportunities for families so that they were no longer reliant on growing one crop. 2,583 households received support for additional income-generation activities such as growing bamboo or selling household products in order to diversify away from rice cultivation and aquaculture which are severely affected by floods and salt water inundation.

Institutions and entitlements

This project could have done more to strengthen the long term adaptive capacity of households by focusing on the relevant institutions and entitlements which exist in the community and how they determine access and entitlements to key assets. There was little indication that this had been taken into account when considering the livelihood options which were promoted through the provision of small loans.

Knowledge and information

School-based programmes ensured that children had the knowledge to enable them to make sound judgements and protect themselves in the event of a natural disaster. Improving physical assets such as raising school playgrounds to reduce the possibility of children playing near contaminated water and improving roads to schools, also contributed to protecting children's health and ensuring their continued education during the rainy season. The dissemination of knowledge at the local level was central to the success of the disaster preparedness element of this project. In order to support this the Red Cross, who have been active in Vietnam for decades, provided assistance with wireless communication systems and broadcast stations to help inform communities about disaster preparedness.

Innovation

One of the gaps in this project was its lack of focus on creating an environment that encouraged and enabled innovation. The project didn't support experimentation or exploration of niche solutions to provide alternative livelihood options. Most of the households who received small loans only invested in a limited

Above: In cooperation with schools in Vietnam, World Vision has organised the games and other activities to raise awareness about hazards and disasters in the area. Fifteen-year-old Giang explains: "I like the game because it gave me a good opportunity to play with my friends and to understand how I should prevent myself and my family from disasters." ©2012 World Vision

range of opportunities (broom-making, fish sauce production, vegetable cultivation). This lack of diversity could potentially lead to market saturation a factor that is exacerbated by the distance between Quang Ngai and major economic hubs thereby limiting the community's access to bigger markets.

Flexible forward-thinking decision making and governance

The project also focused on creating household and hamlet disaster risk reduction plans (DRRP's) and integrating these plans into the community, district and provincial level plans. More than 100 hamlet facilitators and 10 rescue teams were established and trained in natural disaster mitigation and first aid. These people helped more than 7,000 households develop their own disaster risk reduction plans as well as 10 commune and 50 hamlet DRRP's, which were all integrated into existing plans at the district and national level.

World Vision Vietnam is currently striving to ensure that the DRR approaches trialled and developed over the course of the project are shared, understood and taken on at all levels of Government. This is allowing community-based disaster management to be successfully scaled up, with funds allocated to the Vietnamese Government through bilateral channels or other mechanisms developed to manage climate change adaptation. The Department of Dyke Management and Flood and Storm Control have submitted a proposal aimed at establishing community based initiatives in 10,000 communes across Vietnam by 2020.

Project successes and challenges

The project has contributed to building the local adaptive capacity of coastal communities in the province of Quang Ngai through diversifying livelihoods and training people on disaster risk reduction. Working within the existing government structure to integrate local level plans was key to gaining buy-in from the Government and facilitating support and resources for local level initiatives, although originally there were significant hold ups in acquiring government approval for infrastructure projects. The wellbeing of children has been directly improved through school-based programmes on disaster preparedness which are aligned with the DRRP approach taken in hamlets and have reached 500 teachers and 20,000 students.

Some of the income-generation activities which participants pursued, such as growing bamboo shoots near the river bank, were not successful. This was due to the fact that the bamboo shoots were inundated with water before the plants were established. This shows that access to assets alone is not sufficient to successfully build adaptive capacity as this rests on the assumption that people can turn provided assets into a viable income stream. This project assumed that people had the labour, knowledge, land and market linkages required to benefit from sales of bamboo and household goods. Growing bamboo shoots requires a level of technical knowledge and is a long-term investment – this proved to be a challenge for the communities of Mo Duc and Duc Pho who did not have the time to focus on long-term investments as they needed income quickly.

3.3 Building resilience through financial services in Cambodia and Tanzania – case study three

The ability of a household or community to respond to changing circumstances requires a willingness to take advantage of new opportunities, skills and technology which support adaptive activities. Some choices which will contribute to building resilience have higher upfront costs than short-term activities. Taking a long-term view to promoting resilience for future generations is constrained by the need to provide for the present. Many vulnerable families currently ask for emergency loans from neighbours, relatives or other formal or informal money lenders, to form a layer of protection for unforeseen or unplanned cash expenditure which arises from damage or losses due to climate extremes, death, sickness or other misfortunes. Cash savings and other types of asset acquisition also form part of a poor household's strategy to shield themselves from potentially disastrous unplanned expenses. However, high interest, insecure emergency loans, and the forced sale of assets during emergencies for a lower market value, only serve to increase poor household's vulnerability.

World Vision is incorporating financial services such as microfinance, insurance and savings groups across many of its area development programmes. Examples of this include a micro insurance programme which is operational in Cambodia which incorporates life insurance into the cost of loans and weather index crop insurance in Tanzania which is being integrated into a comprehensive response to improve agricultural productivity and ensure food security and community resilience.

Below: Families in Cambodia, like Chham and her five-year-old son, Oab Phane, are being supported to build businesses and secure a sustainable future through VisionFund loans. Chham's home front grocery store is a thriving example.

Promoting local adaptive capacity

Asset base

In Cambodia, World Vision is working in partnership with Vision Fund to provide marginalised households with access to a range of financial services. Vision Fund is a microfinance organisation, which offers credit life insurance to existing loan clients. Marginalised people are often discouraged from taking out formal loans which they could use to make long-term investments to increase their resilience, because they fear the financial risk of not being able to pay the loan back and the impact of this debt on their families. In order to overcome some of these barriers, Vision Fund provides its loan clients with life insurance incorporated into the cost of the loan. This covers the outstanding amount of the loan as well as funeral benefits for the family (client, spouse and two eldest children) if the client were to die before the loan is resettled. This enables people to expand the range of choices available to them and gives them the confidence to take advantage of new livelihood opportunities.

In Tanzania, World Vision is the lead partner in the Market Led Agriculture Programme (MLAP) consortium which is providing weather index crop insurance and loans to farmers as part of a holistic response to increase agricultural productivity and ensure food security. In 2011, more than 1,800 farmers were provided with loans allowing them to access quality inputs like seeds, fertiliser and chemicals as well as providing them with cash flow during the planting season to enable them to pay for food and education without selling off produce at a sub-optimal price.

Institutions and entitlements

Providing people with access to financial services will not necessarily lead to developing adaptive capacity. An appropriate and evolving institutional environment that allows fair access and entitlement to key assets and capitals is necessary if people are able to make use of financial services to develop sustainable livelihoods. Future projects which provide financial services could do more to build adaptive capacity by considering how to establish a supportive institutional environment.

Innovation

One of the main constraints to innovation is the lack of a safety net to buffer against financial risk. Micro insurance provides a space for innovation by enabling people to be more flexible and forward thinking in their decision making and take advantage of opportunities to build their resilience through diversifying livelihoods by buying assets like livestock or by paying for flood proof construction for homes. It also minimises the risk that vital assets will have to be sold off for a lower market price in times of shock or stress such as the illness or death of a family member. The poor have traditionally been excluded from formal financial services such as insurance due to a perception that they are un-bankable, but micro insurance encourages equitable access to financial services through such services being implemented and regulated by institutions like Vision Fund, with those who can afford to pay insuring those who are not able to.

Providing loans to farmers, as in the case of World Vision's work in Tanzania, enables them to have a greater level of flexibility in decision making allowing them to invest in innovative activities which build long-term resilience. Farmers are also being offered weather index crop insurance that pays out on the basis of micro weather patterns that are tracked by locally placed and remotely monitored weather stations. The cost of this is embedded in the loan.

Project successes and challenges

In Cambodia, 1,700 beneficiaries to date have profited from micro-insurance claims totalling more than $200,000USD over a three to four-year period. Had these insurance payouts not been made, the family members of the loan clients (an estimated 5,100 people of which 3,400 are children) could have been adversely affected by the burden of repaying the debt left behind by the deceased, additional debt due to the funeral expenses, or loss of assets through liquidation in order to fulfil the debt obligation. This in turn has reduced the vulnerability of children by safeguarding family assets against death and sickness. In terms of future loan costs, for each year this has represented around 0.2 percent of the loan portfolio, meaning 20 cents for every $100 loan. Micro-insurance serves as an effective way to educate marginalised households of the need to plan, save or set aside some of their income for protection. This represents a significant step towards transformational development through behavioural change.

For micro insurance to be successful it requires an enabling environment in the form of appropriate government laws and regulations and institutional support. The lack of official government regulation and law on micro insurance in Cambodia meant that Vision Fund had to change the set up and delivery of their products to meet with changing regulations as the Ministry of Economics and Finance (MEF) developed new laws for the provision of such financial services. Similarly in Tanzania World Vision found that weather index crop insurance also requires willing stakeholders in the form of insurers, national weather services, and linkages for distribution and support including Financial Service Provider's (FSP's), agri-chain participants and government that provide the necessary regulatory framework.

Financial services such as insurance and loans are not sufficient alone to encourage activities which build resilience. They must be seen as part of a holistic approach to developing adaptive capacity and accompanied by access to knowledge and information as well as institutions and entitlements.

In the case of weather based index insurance, such products operate best when other factors such as lack of access to finance, improved seed varieties, inputs and market linkages are all addressed. Weather index crop insurance is also less useful where more complex conditions exist such as; localised risks like hail, or where microclimates exist (for example, in mountainous areas) because of a lack of accurate indices with which to calculate the impact of these conditions. Weather index crop insurance is also not appropriate for yields that have been affected by pests or disease.

3.4 Kenya North Rift Valley Food Security Project – case study four

After the results of the Kenyan general elections on 27 December2008 were disputed, a wave of violence broke out across the country. This led to a food security crisis brought on by reduced agricultural productivity. The increasing costs of production and prolonged disruption to markets also saw food prices soar and the situation for households was exacerbated by the decline and loss of income generating enterprises. This led to a food security crisis caused by impaired agricultural production resulting from sky rocketing cost of inputs and prolonged disruption to markets leading to soaring food prices and the rapid decline and loss of household income generating enterprises. In the North Rift Valley, the communities of Trans Nzoia West, Trans Nzoia East and Kwanza which have a history of intra and inter community conflicts revolving around natural resources, cattle rustling or disputes around land boundaries or political issues ,were particularly affected by the crisis.

Resilient societies promote diversity. From a normative standpoint, resilient societies are generally considered to encourage tolerance and dialogue and can resolve differences without resorting to violence. People from communities with greater social cohesion across diverse ethnic groups are more likely to feel included and encouraged to work together to reduce the vulnerability of the community as a whole. World Vision carried out a project to enhance the food security and sustainable livelihoods of three communities in the North Rift Valley by availing time critical agricultural inputs to farmers and training them on improved agronomic practices. At the same time the project also focused on reducing conflict and tensions within the community through the training of targeted representatives in conflict resolution and management.

Promoting local adaptive capacity

Asset base

World Vision supported 3,000 Farmers whose livelihoods were impacted by the post-election violence, in accessing various hybrid seeds, tools and fertiliser and preparing land ready for the planting season. A voucher system was used in order to enable people to have a degree of choice in the inputs they decided to buy. The 2008 voucher was supposed to be valid for maize, beans and fertiliser but maize was in short supply as the rainy season had not been good and the harvest was low. Feedback from beneficiaries was that the first phase of vouchers distributed in 2008 was too restrictive in terms of what to buy and who to buy from. So in 2009 vouchers were more flexible and 14 inputs were included on the list of what a farmer could buy with one voucher. Trade fairs were organised so that farmers could have a range of vendors to buy from, and a tender process helped to reduce levels of corruption. In addition to presenting their vouchers, farmers had to present their ID cards to minimise corruption.

Above: Margaret, 40, is a mother of five children and a beneficiary of a food for assets project supported by World Vision. ©2011 Lucy Murunga/World Vision

Institutions and entitlements

As a post-election violence recovery response, the project aimed at targeting the most vulnerable through conducting a community consultation. It was decided that the ratio of returnee to host community recipients should be 70:30. Manipulation of the beneficiary selection process was minimised as much as possible but there was a feeling overall from the community that the ratio should have been 50:50. However non-recipients have stated how beneficiaries shared their harvests with them and relayed the training they were given in agronomic practices.

The project also included the formation and training of Farmer Groups (FGs) in each district to coordinate the project at the community level. This involved training for 60 individuals – 38 men and 22 women, in topics including the formulation of by-laws, team building, resource mobilisation, types of groups and their registration process. The training was facilitated by Government Officers from the Social Services department and has resulted in the FGs being formally registered. As demonstrated with the FMNR case study, such organisational structures can be beneficial in encouraging participation and formalising access to entitlements.

The peace-building training specifically targeted people from all ethnic groups as well as different levels of society in order to build relationships across ethnic lines and reduce tension in the community. As part of the peace-building activities, sports tournaments such as football and volley ball were held focusing on youth from different locations and ethnic groups. Instead of using usual teams divided along ethnic lines, new teams were created with a fair representation of ethnic communities. The matches were complemented by poems, speeches, songs and other games that emphasised peace messages. The events were a crowd puller and mobilised community members - children, youths, women, men and the elderly, regardless of ethnicity or other background - around peace-oriented activities. Participating teams were awarded with balls as an incentive to continue with such events that promise to promote cohesion between and among communities.

Knowledge and information
The provision of assets was accompanied by the training of 600 small-hold farmer representatives from the three districts in improved agronomic practices. This involved training in land preparation for bean production, ecological conditions suitable for specific crops, crop spacing, pest management and disease control. In addition to this, training in organic farming facilitated by the Kenya Institute of Organic Farming (KIOF) was conducted. Topics covered included soil and water conservation, soil fertility, tillage techniques, crop protection and the production of organic fertiliser from cow manure.

Training in Local Capacities for Peace (LCP) and Peace building was also conducted in the three districts. While Peace building, which focused on non violent conflict management, was geared towards the youths, Local Capacities for Peace brought together administration officials, church leaders, opinion makers and farmers (both beneficiary and non beneficiary) from different ethnic groups in the same training. The training focused on conflict resolution and management and was being put into practice by some individuals to resolve conflicts within their communities and promote peace at social platforms.

Innovation
Despite the fact that this project was primarily concerned with responding to the immediate food security needs of the community, it also aimed to provide farmers with the knowledge and resources to adopt innovative farming techniques such as organic farming and agronomic practices. This enabled farmers to carry out agricultural practices which would not contribute further to the environmental degradation of the area, but would instead help to restore soil fertility and hopefully increase agricultural productivity in the future.

Flexible, forward-looking decision making and governance
One of the gaps in this project was a lack of attention to developing flexible, forward-looking decision making and governance. The short-term nature of this recovery response meant that long-term strategy to build adaptive capacity was not incorporated into the project design. All interventions, even humanitarian responses, should look beyond the immediate needs of the community to support decision making that is forward looking so that communities are able to anticipate, incorporate and respond to changes in the future.

Project successes and challenges
Evidence from this project suggests that food security, peace building and conflict sensitivity components can complement each other in order to reduce vulnerability. However, one of the challenges to applying a fully-integrated programme approach is to ensure that certain components are not just 'add-ons' and that all activities are properly built into the programme design from the outset. It is critical that the delivery of information is planned and implemented early enough in a project in order to have the desired impact. Although this project was almost a year long, some people were not trained in peace building until the last months of the project, which not only restricted the ability to monitor the way in which the community are using the skills, but also hindered follow up. If the project had identified local community-based organisations working in the area and looked to strengthen their capacity in peace building from the outset, then they could have built in replication strategies for peace-building training and activities after the project has been phased out by World Vision.

Another concern was the fact that there was little sentiment from the community to want to move forward on their own after the project had finished and a clear desire was expressed for World Vision to stay. The expectation of future support may have reduced tension in communities in the short term but could make it worse in the long term.

3.5 Integrating Climate Adaptation into community projects in Nepal – case study five

Marginalised communities in the mid-western districts of Nepal are facing chronic food shortages due to frequent droughts, declining harvests and the soaring cost of imported food. Climate change threatens to make the situation worse by increasing the frequency and intensity of rainfall in some places, prolonging periods of droughts in others, and contributing to glacial melt at higher altitudes affecting agricultural production and food security (NCVST, 2009). World Vision has been working on food security in the mid-Western district since 2003 but in the past few years has transitioned from relief and rehabilitation work to community development. The regional variation in climate in Nepal makes it particularly difficult to build up an accurate picture of how

The Chetanshil Mothers Group in Jumla, Nepal has been working with World Vision on a Food Security & Agricultural Diversification Project; set up to raise income for farmers and help women to secure food for their family.

climate change will impact specific areas. Therefore documenting people's experiences of climate change can be of great value in assessing changes in the local climate and identifying appropriate coping strategies which enable people to become more self-sufficient in food production. Through diversifying crops, improving land management and storage techniques, and facilitating access to markets, the food and livelihood security of the local population has been improved.

Promoting local adaptive capacity

Asset base

World Vision is focused on achieving long-term food security and household resilience of the community of Jumla, and as a result a large part of this project involved providing the local community with access to a range of assets with which to improve agricultural production. This involved terracing slopes to increase land available for agriculture, distributing seeds, building greenhouses to raise seed saplings, setting up of seed banks, providing training in composting techniques, and repairing and maintaining irrigation canals.

World Vision also supported the creation of community groups such as greenhouse groups and seed banks to enable the community to share their assets in order to gain greater returns or have reserves during times of hardship. The members of the greenhouse group have not only achieved food security all year round but have created a savings and credit group with the money generated through the sale of their surplus vegetables. They plan to use this money to construct more greenhouses, maintain the existing ones and have also begun loaning money to members of the greenhouse group.

Institutions and entitlements

The project aimed to ensure that there was an appropriate institutional environment to allow fair access and entitlement to key assets and capitals by setting up seed banks and green house groups. In order to be successful, it is important that such newly established institutions are socially rooted and conform to existing norms about group membership and power relations. It was reported that it was difficult to get all households to invest in activities that delivered communal benefits such as maintaining the irrigation canals. One of the reasons for this may have been due to issues surrounding the existing institutional structure which determines access to water. Therefore the institutional environment should be considered alongside the provision of assets as part of a holistic approach to building adaptive capacity.

Knowledge and information

Access to information about changes and trends in the local climate in Jumla was poor. World Vision worked with the local community to actively engage them in identifying and documenting changes in the local climate and existing indigenous coping mechanisms, which combined with scientific information on regional climate trends, can be used to identify a series of suitable interventions to develop resilience. World Vision has made a positive start in this respect but there is more to do in the way of continuous monitoring of local climate variations and feeding this information back to the local community so they can use it as the basis for their decision making.

Innovation

As climate change affects temperatures and rainfall patterns in Nepal, farmers are adapting to the changes at the local level by taking up opportunities to diversify their crops from paddy fields to orchards. However this raises new challenges as without access to appropriate storage the apples rot before they are able to be transported to market, so farmers either lose much of the crop or are forced to accept a low market price for the produce. World Vision worked with the community in Jumla to improve the shelf life and market value of their produce by constructing 12 apple cellars each with a storage capacity of seven tonnes. This preserves apples until they can be transported to market meaning that farmers can now take advantage of higher off-season price for their produce. The project also focused on improving agricultural roads to increase farmer's access to markets.

Flexible forward looking decision making and governance

Although the project aimed to support forward-looking decision making based on documenting the community's perception of changes in the climate, there was little evidence that the local government were doing much in the way of monitoring changes in the climate and utilising this information to support long-term community development. Furthermore there was a worrying disconnect between what District Government

Officials believed to be the likely impacts of climate change in the area, and what the people of Jumla were experiencing in reality. This in an area which needs to be considered more fully in order to prevent decision-making which leads to long term increases in vulnerability and instances of poor adaptation.

Project successes and challenges

The farmers involved in this project have reported yield increases of between 50 and 100 percent as a result of the activities facilitated by World Vision (expansion of terraces, distribution of seeds, growing saplings in greenhouses, training in composting and maintaining irrigation canals) and now grow barley, wheat, beans, potatoes, maize and apples on the terraces. This has led to a significant reduction in child malnutrition. The creation of seed banks, along with awareness-raising about the importance of child nutrition and the potential for indigenous crops, has led to a change in dietary consumption in the community.

Despite some successes with the greenhouse groups, it was difficult to encourage the local community to invest in group activities which have a long-term benefit for the community as a whole as discussed above. People are still more concerned with the short term food insecurity they face for several months a year. It proved particularly hard to mobilise the most marginalised people to work on irrigation maintenance, terrace construction and agricultural roads without incentives such as food for work schemes. This trade off also applied to changing people's behaviour in relation to the environment since households are primarily concerned with procuring scarce resources for their immediate well-being rather than employing sustainable approaches to using natural resources. Changing behaviour in this way requires significant long-term engagement with communities to promote the idea that sustainable land-management approaches can contribute to a more secure livelihood in the long run, while also providing more immediate gains.

Another key challenge faced in Jumla is the fact that information about climate trends is not currently being collected or disseminated with the local community. Existing data at the national or regional level is inconsistent and in some cases unreliable. The government believe the impact of climate change to have a net positive effect on agriculture production in the region resulting in increasing yields, but this has not been the experience of the community to date. This highlights how a lack of information and understanding restricts the ability of both the local government and the community to be responsive to changing circumstances and to support adaptive activities. Collection and analysis of local-level climate and food-security data would support the community in Jumla to demand more engagement from local government making data available for local use and stimulating discussion around the need for district level planning and support mechanisms around climate change. However, this will need to be accompanied by significant change to underlying institutional structures, such as caste and gender, which are inherent throughout the far and mid-western regions of Nepal, in order to fully empower the community.

3.6 Integrating DRR in Area Development Planning in Indonesia in Indonesia – case study six

Being an archipelago, Indonesia is very vulnerable to the impacts of climate change which threaten to affect the livelihoods and food security of poor households. Agriculture and fisheries can be adversely affected by prolonged periods of droughts and floods impacting on food security and nutrition. Health can be affected by heavy rainfall and flooding overwhelming sanitation systems and exposing people to waterborne diseases. Higher temperatures increase the spread of mosquitoes and the risk of malaria and dengue fever, while the availability of water for irrigation and drinking is impacted by changing rainfall patterns and salt water inundation from sea level rise (UNDP,2007b). In the island provinces such as West Kalimantan, where the local population is reliant on agriculture (mainly rice and rubber production) the impacts of climate change are exacerbated by the affects of other problems in the area such as conflict over land, deforestation and unsustainable environmental practices. This is resulting in deteriorating harvests and soil fertility, scarce fresh water sources, and reduced stocks of fish and animals. In the urban area surrounding Jakarta, rapid and unplanned urbanisation and the resulting lack of essential services (water, sanitation and solid-waste management) are increasing the severity of the impact of flooding and potential sea level rise.

The Government of Indonesia has developed a National Disaster Risk Reduction Plan (2010-2012) focusing on identifying, assessing and monitoring risk, enhancing early warning, and promoting innovation and education to build a safety culture. However, such plans are poorly coordinated and are not filtering down to the local

level. Education about disaster preparedness and sustainable environmental practices remains low. World Vision has developed a framework, with accompanying guidelines, to integrate DRR into all levels of our development programming in Indonesia. This framework ensures that interventions do not increase vulnerability, but are designed to reduce future disaster risk and build the resilience of communities. This case study looks at how that approach is being used in two different regions of Indonesia, the island province of West Kalimantan and the urban communities living on the banks of the Ciliwung River in Jakarta.

Promoting local adaptive capacity

Asset base

In Jakarta, many communities living on the low-lying banks of the river were already involved in autonomous adaptation to the impact of floods. Autonomous or spontaneous adaptation refers to adaptation that does not constitute a conscious response to climatic stimuli, but rather is triggered by ecological changes in natural systems and by market or welfare changes in human systems (IPCC, 2007). In the case of the communities in Jakarta this involved securing their assets by constructing taller buildings and keeping valuable assets on higher floors or by raising the level of lower floors. World Vision is complementing this by working on increasing resilience of the communities through training them in disaster preparedness. One aspect of this involves providing assets which can be used by communities to prepare themselves for, and respond in the event of, a disaster. These include flood early-warning equipment such as bicycles, loud speakers, warning sirens and community flood information boards.

Institutions and entitlements

One of the gaps in this project was the focus on ensuring the existence of an appropriate and institutional environment to enable fair access and entitlement to key assets and capitals. One of the main issues impacting on people's vulnerability in West Kalimantan was cited as land tenure issues, but there was little evidence that this had been taken into consideration when supporting the development of appropriate livelihood options.

Knowledge and information

In West Kalimantan this integrated approach to DRR was carried out by using World Vision's Community Owned Vulnerability and Capacity Assessment (COVACA) tool in eight villages to assess the risks to livelihoods of climate change and other dynamic pressures experienced by the community and to identify ways in which the community could strengthen their livelihoods and reduce their vulnerability to natural disasters.

This involved training local people to collect and analyse data from their own community which encourages the community to take ownership of their village development plan and gives them the knowledge and the resources to take advantage of opportunities to build adaptive capacity. Two community members from each village were trained on data collection so that they could use this to facilitate discussion within the community, in order to develop a community profile and five year village development plan. This has also developed a sense of responsibility within the community members themselves for the development of their village and recognition that it is not only the leaders who are responsible for this process.

The creation of village development plans was accompanied by the 'Green Schools' concept which aimed to increase children's awareness of environment protection. Teachers were trained to help children learn by understanding their surrounding environments such as trees, soil, water, forests, river, waste etc in order to contribute to building the long-term resilience of the community.

In Jakarta, poor environmental practices were contributing to the impact of floods on communities living close to the river banks. In order to bring about behavioural change, World Vision engaged the communities in educational programmes to inform them about the impact of their actions. This involved informing communities about the impact of throwing waste into the river system. This was accompanied with training in disaster preparedness which involved conducting vulnerability and capacity assessments and using these to support the community to develop village risk maps and flood early systems. Three different warning levels were identified as well as channels through which warning messages and information can be spread such as TV, radios.

Innovation

Using the COVACA tool, World Vision worked with the community in West Kalimantan to identify the issues which were contributing to the community's vulnerability. The main issues were found to be floods and land

tenure issues resulting from the expansion of palm oil plantations which were causing a lack of access to natural assets (land, water, forest etc.) and a potential source of conflict. These issues were having an impact on the community's main livelihoods of rice and rubber production and were reducing the community's ability to respond to the impacts of climate change. Using the information gathered from the community based assessment World Vision supported 22 women from eight villages in developing alternative livelihoods. This involved training innovative livelihoods such as making handicrafts from recycled waste. Seven women have continued making handicrafts after visiting a home waste recycling factory in urban Pontianak and two of them have started to sell their products. Some farmers have also been selected for Natural Resource Management (NRM) training in forest product cultivation and agro-forestry in collaboration with the Dian Tama Foundation in Pontianak. Identifying the issues which were contributing to the insecurity of the community's livelihoods and enabling them to take advantage of new opportunities to diversify is helping people to build their adaptive capacity.

Flexible forward-thinking, decision making and governance

World Vision aims to work with a range of stakeholders in Indonesia including local and district levels of government, communities and children through schools programmes. This is particularly important in order to ensure active participation of all groups in decision-making processes and to achieve an equitable access to key services and resources.

World Vision is also focused on brokering new relationships which will facilitate decision-making which supports long-term resilience. In West Kalimantan World Vision worked with new institutions with whom they hadn't collaborated previously, including the Department of Forestry, BPN (National Land Authority), TAPEM (Government district division) Agriculture District Agency, BLH (Environment Agency), as well as existing partners such as the Education Agency through the Green schools project. This is particularly important for ensuring information is shared across all relevant stakeholders so that decision making is forward looking and able to respond to changing circumstances, avoid instances of poor adaption.

Project successes and challenges

The lack of information and knowledge held by the local community both in West Kalimantan and Jakarta in respect to sustainable land management and environmental practices, like contaminating the natural environment with solid waste and carrying out slash and burn agriculture, were further contributing to their own vulnerability and those of future generations. Through using the COVACA tool to help the community in identifying the root causes of their vulnerability, World Vision was able to work with the communities to build their resilience through training them in disaster preparedness and changing their approach to the environment. This has resulted in increasing people's ability to withstand the impact of disasters and reduce the loss of life and assets. Children's security has been improved through schools programmes which have taught them how to protect both themselves and the natural environment.

Had the project taken the components of resilience to heart and integrated the LAC framework from the outset, more could have been done to better support adaptive capacity in the long term and to reduce the immediate vulnerability to disasters. This is particularly true in terms of looking at the institutional environment and how this affects people's access and entitlements to assets. The number of women who continued to pursue the alternative livelihoods they were trained in by World Vision was very low. Analysing this situation identifies the factors which were constraining people's ability to take advantage of opportunities to diversify their livelihoods, and might have helped to increase the success of such interventions in supporting people to build adaptive capacity.

3.7 Africa Food Security, Climate Change and Economic Development learning event – case study seven

Sub-Saharan Africa is particularly vulnerable to climate change because of its dependence on natural resources, high levels of poverty, and weak infrastructure and governance. New integrated development approaches will be needed to help households and communities adapt to the interaction of both old and new pressures including conflict, natural disasters, rising food prices and environmental degradation. Over the years, World Vision has developed a wealth of experience in implementing development programmes around the world; however in the past this learning was rarely shared between regions because of the lack of mechanisms or platforms through which to share such experiences. To address this problem, World Vision set up Learning Centres which are located in certain regional offices with the mandate to identify best practices and disseminate knowledge, particularly around successful innovation throughout the region, through face-to-face and virtual collaboration.

The Learning Centre for Food Security, Climate Change and Economic Development in East Africa organised a regional conference in 2011 where World Vision staff met key stakeholders working on issues related to food security, climate change and economic development in the region. These included scientists from the World Agroforestry Centre (ICRAF), The International Maize and Wheat Improvement Centre CIMMYT, the International Crops Research Institute for Semi Arid Tropics ICRISAT, and the Alliance for Green Revolution in Africa (AGRA), as well as agribusinesses and other NGOs. The forum also provided a space for World Vision National Offices to share successes from different programmes across the region and learn from each other.

Promoting local adaptive capacity

Asset base

The event showcased many assets which are effective in achieving food security and mitigating the impacts of climate change on agriculture. These included resources such as fertiliser, tools, drought tolerant seeds, greenhouses, irrigation systems and storage/preservation facilities.

Financial insurance was also presented as another way of increasing resilience through providing viable financial services to farmers allowing them to make long-term investments and insure themselves against risk. Such approaches have already been discussed in the case study about weather index crop insurance in Tanzania.

Institutions and entitlements

Although beyond the scope of the conference itself, which was primarily a forum for demonstrating different agricultural approaches and technologies, it is important to take into account that such assets do not exist in isolation and can only deliver sustainable livelihoods through an enabling institutional framework. Building

irrigation infrastructure for example will only deliver water to farmers if the appropriate institutions are in place to ensure this. It is important that any interventions which are established as a result of partnerships formed at the event consider the institutional environment in which they will be operating to ensure fair access to assets. As with other case studies such as the FMNR cooperatives in Ghana and Ethiopia and the greenhouse groups in Nepal demonstrate, it is essential to consider the institutional arrangements required to manage common natural resources and take decisions about the use and distribution of any benefits. In cases where new institutions need to be established such as seed banks or saving groups, success depends on taking into account local norms and being socially rooted.

Knowledge and information

The aim of the Africa Climate Change, Food Security and Economic Development event was to build the necessary and strategic coalitions and partnerships to improve the knowledge base in the region in terms of innovations with relation to food security, climate change and economic development as well as leverage resources. A number of organisations informed the delegates about their work, introducing a range of activities and assets which are aimed at improving the resilience of agricultural systems to changing future conditions. But in order for these assets to be successfully used to support people's adaptive capacity they must be accompanied with the knowledge about how to use them most effectively. The preference for growing maize in Sub Saharan Africa despite the fact that drought is a major constraint in its cultivation, illustrates how social acceptance plays a critical role in effective adaptation. In response to this, the speakers at the conference discussed how investments in drought tolerant varieties of maize seed are necessary to ensure food security in the region along with education in embracing non-traditional varieties of crop which are more tolerate to drought such as soya bean.

Flexible and forward-thinking decision making

The event sought to provide an opportunity for organisations working within the sphere of agriculture and food security in East Africa to identify sources of credible information and establish new relationships in order to make development decisions which are forward-looking and take into account the social, environmental, economic and technical feasibility of different interventions. For example the World Forestry Centre (ICRAF) gave a presentation on a model for the domestication of high potential tree crops through public-private partnerships involving participatory tree domestication. Such relationships are essential to ensure equitable access to resources and to empower rural farmers to take advantage of opportunities for adaptation. Establishing these relationships and identifying sources of relevant information to draw upon, should enable World Vision to make programme decisions which take into account climate knowledge and are able to respond to changing circumstances, in order to support people in building adaptive capacity.

Project successes and challenges

The forum not only offered a space for sharing success stories between the different World Vision National Offices, but also included a visit to a successful agricultural project in Kisumu which is managing the impact of striga (a parasitic weed) on crops by improving soil fertility. The conference delegates met community members who explained that thanks to capacity building and linking to affordable technology such as 'push-pull' (approach to controlling pests), improved varieties of seeds, water harvesting and composting they are now harvesting more bags of maize they did prior to their involvement in the project. They felt empowered through the project because they are now well trained and have group savings which ensure that they keep working together as a group. The community has also been connected directly with suppliers and sources of technology so they feel they have the relationships, skills and the capacity to continue after World Vision is no longer supporting the project, a factor that is key to building resilience in the long term.

They also explained how the project had directly impacted on their food security as previously an acre might not have been sufficient to feed a family but using the new technology they have been exposed to, one farmer said he has witnessed that he can feed eight children on a very small piece of land. However specialisation on a specific crop was felt to not be practical for those with very small farms and diversifying the variety of items being grown was seen to be a preferable option. It is hoped that these farmers are now not just cultivating on a subsistence level but that they are moving towards commercial production.

4. Findings from the field on local adaptive capacity

4.1 The interconnectedness of the LAC framework

As the evidence from the case studies demonstrates, building adaptive capacity relies on distinct yet interrelated elements outlined in the LAC framework. Therefore it is important to take this into account when designing programming. The case studies from Ghana and Ethiopia demonstrate how secure livelihoods not only depend on the existence of assets alone, but on the institutional environment which determines access to assets and the knowledge and understanding that people have to use assets to develop their adaptive capacity. The success of the Farmer Managed Natural Regeneration approach in reversing environmental degradation and providing secure livelihoods for the local community was dependant not only on education and training, but providing an appropriate institutional environment. This was achieved through the formation of legally recognised cooperatives to ensure the community had appropriate rights to the land, natural resources and any revenues which stemmed from the project.

Similarly, the example from Vietnam shows the impact of when assets are provided in isolation. The communities involved in the World Vision programmes in Vietnam failed to grow bamboo shoots because they were not provided with sufficient training to grow such a challenging plant and because the project failed to take into account the situation of the community and the need to balance long-term investments with the short-term daily needs to survive. As the case study from Cambodia and Tanzania also highlight, access to loans and insurance are not a silver bullet to building adaptive capacity, but must be built into a holistic response to reducing vulnerability which also focuses on people's ability to make use of the financial security offered by loans or insurance.

4.2 Organisational change is crucial

Building local adaptive capacity through applying an integrated approach to development programming requires a change in a development organisation's approach. It involves working with communities to identify their needs and capacity, utilising new sources of information and developing programmes based around scenario planning. This way of working will present a challenge for many practitioners as they will need to be adequately supported with appropriate training and resources. Within World Vision, our development programme approach (DPA) recognises that the process of the intervention is as important as the outputs and outcomes. The DPA brings to the fore the importance of building staff capabilities, ensuring technical and financial resources are available as well as a strong understanding of the local context. Guidance for development programming, technical resource for designing projects and staff competency frameworks seek to create the required organisational change within World Vision to enable resilience through programming. However, promoting agency of development practitioners as well as the agency of community members which they serve requires a shift from compliance to fostering learning and innovation.

The Africa Regional learning event and the guidelines for integrating DRR into area development planning in Indonesia are examples of where World Vision is seeking to increase access of staff to information and tools which supports new ways of working but more work in this area is needed. A better understanding of existing programming approaches and methodologies, and how to use them for programme design, implementation, monitoring and evaluation is needed. This must be matched by organisational incentives that promote mainstreaming of integrated risk management, networking and coordination, and facilitation.

Supporting children's agency is a critical part of applying an integrated approach to development programming and World Vision needs to continue to learn how to include children's voices in vulnerability and capacity assessments, implementation and review processes. There is also a need to champion the inclusion of children in development to communities and donors in order to promote the long-term benefits of development interventions.

4.3 Building partnerships is required from the outset of programme design

Building effective partnerships at different levels can help to support long-term resilience. Brokering relationships between communities, civil society, local government, research institutions and the private sector where appropriate, can support a culture of learning which will enable informed decisions to be made at all levels. As the experience from programming in Indonesia illustrates, building a relationship between local community level structures and district and national government is important for gaining institutional support for local level adaptation. Strengthening such relationships should ensure that processes, such as planning approval, can be streamlined in the future to avoid lengthy delays to small-scale infrastructure projects, such as improved roads and raised school playgrounds. It is when such interaction is lacking, as the case study from Nepal shows, that a disconnect between the reality of what people are experiencing on the ground, and what the local district government believes to be the situation occurs. This can result in ill-informed decisions, and support for inappropriate activities in the future. Strengthening the linkages between communities and institutions and creating space for a flow of information and feedback loops between them can help foster greater accountability.

4.4 The challenge of changing behavioural practices of community members

Changing deeply-held beliefs or practices in favour of behaviour which builds local adaptive capacity is shown to be a challenge in many of the case studies presented above. Transforming unsustainable land or waste management practices which result in environmental degradation not only requires education, but also needs mechanisms to encourage change such as incentives or alternatives. This is reflected in the case study from Ghana and Ethiopia where sustainable land management is encouraged through providing alternatives such as planting fast-growing trees for fire wood in place of charcoal production. After years of failed land regeneration projects focusing on replanting trees, and a deeply held belief that forest fires were inevitable consequences of the dry season, it was necessary for the community of Talensi in Ghana to participate in a peer learning visit to a successful FMNR project in Burkina Faso to believe that the approach could work. In the case of Indonesia environmental regulations existed but they were poorly enforced so there was no real sense of obligation by the community to adhere to them. In order to change people's approach to waste management in Jakarta, it was necessary to make them aware that disposing of waste into the rivers was making the impact of flooding in the city worse.

4.5 Long-term benefit versus short-term survival

As the evidence from several of these case studies shows, the tension between meeting the immediate needs of poor households and investing in a longer term vision of local adaptive capacity remains a challenge. In many of these cases few incentives exist to prioritise long-term sustainable development gains and existing policies and institutions disproportionately reward short-term decision making. There is a need for incentives or social protection mechanisms that support decisions that build resilience to be prioritised. In the case of Nepal, it was difficult to encourage poor households to participate in activities which improved the resilience of the community as a whole, such as installing irrigation systems or repairing roads, without incentives like cash or food for work.

Financial mechanisms, such as the micro-loan insurance offered by Vision Fund in Cambodia or weather index crop insurance in Tanzania, offer safeguards which enable people to be more flexible in their decision making and encourage people to take advantage of a range of opportunities to invest in their long-term security. Collective action such as greenhouse groups and seed banks, like the ones established in Nepal, has also been shown to support activities which build long-term resilience. Pooling resources and sharing the revenues to finance additional activities, can enable individuals to make investments which might have otherwise been financially unviable.

4.6 Effective innovation

People's ability to innovate in response to the challenges they face depends on other variables such as social acceptance, financial viability, information and knowledge, and institutional support. Therefore it is necessary to

identify the forces which constrain innovation in any given context and remove the barriers so that innovative approaches can be supported. Assisting farmers to change their land management approaches to FMNR in Ethiopia and Ghana required institutional support to develop land tenure rights for cooperatives. Diversifying livelihoods in Vietnam through the growing of bamboo shoots failed because of a lack of technical capacity to translate information into the knowledge of how to grow bamboo. Farmers in Jumla, Nepal, had already started to change their agricultural practices by converting their paddy fields to apple orchards as temperatures increased, yet their lack of storage facilities and access to market meant that they were unable to get a decent price for their produce without external support from World Vision to overcome these challenges.

As the challenges faced by poor communities around the world change, so will the responses that are needed to adapt to such changes. Rather than just providing people with specific assets and technologies and assuming that this will foster innovative responses, it may be more beneficial in the long term to put people in touch with a range of sources of information and technologies. This will help them choose the most appropriate technology for the specific and changing circumstances they are exposed to. The Africa Learning Event is a good example of facilitating this process. The event provided an opportunity for different organisations and suppliers to have a space to share their learning and different technologies with World Vision staff from across the region with the aim of brokering new relationships for future development programming.

4.7 People's own agency is essential to make informed decisions

Building resilience hinges on developing the agency and capacity of marginalised people to overcome the range of challenges they face and determine their own future. Building local adaptive capacity is not simply about delivering infrastructure or technology, but is about expanding people's range of choices as well as access and influence over institutions and decision-making processes. Many of the case studies in this paper show how World Vision is focusing on building the ability of marginalised people to make informed decisions regarding their adaptation to future circumstances. However the challenge remains in turning information into knowledge and supporting peoples' ability to use information for behaviour change.

The case studies illustrate that this can be achieved through strengthening local community-based organisations like cooperatives, in the case of the FMNR projects in Ethiopia and Ghana (case study one), savings groups and seed banks in Nepal, and disaster risk reduction committees in Indonesia and Vietnam. Supporting communities to analyse and identify their own vulnerabilities and capacity for adaptation through tools like COVACA, as in the case of Indonesia, also helps to support people's ability to make informed choices and design and implement their own 'projects'.

Part of this process involves developing children's agency through recognising the important role that children themselves play in the development of their communities. This is being done to a certain extent through DRR programming in Indonesia and Vietnam where they are seeking to use schools-based programmes to develop children's understanding of the natural environment alongside knowledge of how to protect themselves in the event of a disaster. However, more needs to be done to mainstream the building of children's agency across all programme interventions. Local adaptive capacity cannot be properly achieved while children remain invisible within adult-focused development initiatives.

4.8 Developing adaptive capacity can support the child well being outcomes

As these case studies have demonstrated developing adaptive capacity at the local level can support World Vision in achieving the child wellbeing outcomes (see Section 1.4). In the case of the projects in Indonesia and Vietnam, developing children's knowledge of sound environmental practices and disaster preparedness through schools-based programmes, contributes to their safety and protection. The focus on ensuring access to schools during the rainy season, by improving roads and raising school playgrounds to keep children away from stagnant water, also contributes to ensuring continuation of education as well as good health by protecting children from disease. In Ethiopia and Ghana, the innovative FMNR approach can contribute to children having good health and being well nourished, by improving food security and available livelihoods. However, for child nutrition to improve may also require educational programming. One aspect of the child well being outcomes which does not come out very strongly in the case studies apart from in the case of the programmes in Vietnam and Indonesia which is also a critical part of building adaptive capacity is

the participation of children in the decisions that affect their lives and role they can play in the development of their communities. This is something which must be taken into account in future programming which aims to build long-term adaptive capacity.

4.9 Integrating climate information for medium to long-term decision making

Aside from the case study from Nepal which explicitly focuses on documenting and utilising climate information for decision making regarding relevant interventions, there is a general lack of emphasis on the use of climate information across all the case studies presented. Projects are still being developed in response to immediate needs with relatively short time frames. In part this is due to the current approach to community participation (asking communities what they want) as well as short-term funding periods which result in a project-focused approach.

Building local adaptive capacity is about developing medium to long-term strategies which take into account climate knowledge and uncertainty around possible impacts. Without integrating this information into scenario planning, short-term development approaches will continue to be implemented, leading to the potential for ill-informed planning or long-term increases in vulnerability.

4.10 Working in fragile contexts and incorporating conflict sensitivity in programming

Better understanding is needed on how to build adaptive capacity in fragile contexts and how to incorporate conflict sensitivity into an integrated programming approach. As the North Rift Valley case study from Kenya demonstrates, applying conflict sensitivity presents a challenge for programming. Balancing both the food security and peace building components of the project to ensure that different elements of programming happened at the right time in the programme proved to be difficult. Embedding conflict sensitivity will require a greater focus on context and needs analysis to ensure that all relevant components are built into to the programming cycle from the outset to ensure appropriate timing of specific interventions.

In addition to context analysis and conflict sensitivity, promoting adaptive capacity in fragile contexts requires working in partnership with traditional governance structures and community based organisations. Empowering local organisations and authorities to promote agency means relinquishing control and facilitating a participatory process of development.

5. Recommendations for policy and practice

The findings from the case studies in this paper point to the following recommendations for policy and practice, and next steps for developing World Vision's work in promoting local adaptive capacity and resilience.

5.1 Promote an integrated approach

Maintaining an integrated approach in development, especially in areas while there is high risk, is needed to build local adaptive capacity. As the cases illustrate, promoting adaptive capacity at the local level requires a combination of the five different elements. Designing, implementing and reviewing development with the five elements of the LAC framework (See Section 1.2) in mind is a challenge and requires working in partnership and organisational change.

5.2 Incentivise organisational change

Prioritising local adaptive capacity through development requires buy in from high-level decision-makers in development organisations as well as from donors to support the organisational change process. A shift from compliance to building the agency of practitioners and community members is needed. This calls for a shift in organisational approach of project delivery to facilitation of community empowerment. World Vision's Development Programme Approach and related competency framework are a step in the right direction; however this must be met with flexibility and incentives for innovation, learning and networking.

5.3 Champion children's agency

More needs to also be done to mainstream building children's agency across all programme interventions. This requires focusing on children's role in programme design, implementation and review. In promoting local adaptive capacity, it is the children who are going to see further changes to their ecosystem, increased shocks and stresses. By including future generations in current development programming and policy, the importance of long-term benefits can be held in focus against the need for short-term gains.

The need to mainstream children's agency into development programming also highlights again the importance for development organisations to be more expert in the process of facilitation, rather than just being focused on delivery.

5.4 Promote a culture of learning and innovation

Facilitating the exchange of information between development practitioners, research institutions, government and the private sector as well as promoting peer learning exchanges between successful programmes should be encouraged in order to share best practice and increase access to information and networks. In supporting the value of learning, elements of adaptive capacity, such as using information, decision making, and innovation will be strengthened.

Furthermore, development organisations need to follow up on learning events and ensure that lessons and learning are translated into change in development design, implementation and review. Promoting a culture of learning requires that appropriate incentive structures are in place in order to ensure that learning is prioritised.

5.5 Instil flexibility and scenario planning

Building adaptive capacity is not just about being able to respond positively to anticipated and known risks and vulnerabilities, or existing shocks and stresses, but is also about being able to address uncertainties in the future and maximise opportunities. Therefore flexibility is central. In recognition of this, World Vision's new resilience strategy includes innovation and flexibility as specific goals. However, the challenge remains in building flexibility into development programmes which have specific funding timeframes that require measurable outputs. A greater emphasis on scenario planning in future development interventions is necessary to deal with uncertainty. Development programming should be designed with the short, medium and long term in mind and not just be focused on immediate gains.

5.6 Be conflict sensitive

At a minimum, conflict sensitivity is required across all development programming and must be included in the design, implementation and review. This requires ongoing context analysis, scenario planning, and facilitation between a range of stakeholders. Promoting local adaptive capacity involves working with existing institutional structures and promoting entitlements. It cannot be power neutral and must recognise changing power dynamics.

5.7 Undertake monitoring and evaluation for local adaptive capacity

Building local adaptive capacity requires effective learning and reflection from communities in partnership with development practitioners and key stakeholders. Identifying appropriate indicators for local adaptive capacity is a new challenge. Indicators for effective learning should be developed in a participatory manner. This should include intentionally identifying and monitoring underlying conflict dynamics and social tensions within programme areas. Furthermore, short-term and long-term timeframes must be considered in order to effectively learn how to build local adaptive capacity as well as demonstrate the social and economic value of such an integrated approach. Lastly, the development process must be monitored as well as the outcome evaluated. This is crucial if we are to change the development system to promote issues of resilience and local adaptive capacity.

5.8 Use of climate and socio-economic information

Greater use of climate information and understanding of changing weather patterns is necessary in order to support development interventions in responding to the potential range of future scenarios. However, the level of uncertainty around climate projections at the local level, mean that it is still important to enable communities and local meteorologists to identify current changes in weather patterns as well as short and medium term weather trends. However, climate and weather trend information represents only one aspect of the wide array of information necessary for informed decision-making. Access to timely and relevant information must be facilitated in relation to the strengths and needs of the communities we serve.

5.9 Demonstrate cost benefit as well as impact for local behaviour change

Carrying out a cost benefit analysis of integrated approaches can assist in supporting an integrated approach to development. However, consideration in regards to costing benefits of both short and medium terms is required. Furthermore, the difficulty in costing "soft" interventions (such as supporting entitlement, decision making, and innovation) means that much of the benefits of supporting local adaptive capacity cannot easily be quantified in terms of cost benefit. Furthermore, it is costly for organisations to go down the route of endeavouring to demonstrate cost benefit and value for money for donors, rather than demonstrating the value of supporting local capacity for communities and local and district government. The type of information needed for behaviour change and innovation at the local level, may not be the same type of cost benefit information required for donors.

6.0 Explore further the links between resilience and adaptive capacity

As outlined earlier in this paper, adaptive capacity and resilience share many of the same characteristics but have conceptual differences. More action research is needed to explore both concepts in practice. Furthermore, how supporting local adaptive capacity and resilience in fragile context differs from non-violent and stable states requires more investigation.

6.1 Investigate adaptive capacity in urban areas

Aside from the case study from Indonesia, all the other case studies presented in this paper focus on building the adaptive capacity of people living in rural agricultural areas. However, with increasing urbanisation and the pressure of a growing population and informal settlements, urban areas are experiencing increasing levels of risks and hazards and more research is required on how adaptive capacity and resilience can be effectively promoted in urban areas.

6. Conclusion

Building the local adaptive capacity of communities to withstand the range of dynamic pressures and changes facing them political instability, food shortages, decline in natural resources, conflict and the impacts climate change will require new ways of working. This will involve adopting an integrated approach to development and humanitarian aid by applying a resilience lens to all aspects of development, including poverty reduction, governance, conflict prevention, peace building and disaster risk reduction. Developing adaptive capacity at the local level can support many of the characteristics of a resilient system. This paper therefore took adaptive capacity as its starting point and reviewed examples of World Vision programming in Africa and Asia, using the local adaptive capacity framework. As the analysis of the case studies shows, it is necessary to work across the five distinct yet interrelated characteristics in order to build people's adaptive capacity. Working on just one characteristic alone, such as providing people with assets, will not lead to changes in people's capacity to anticipate, deal with and respond to adverse change.

Similarly, fostering innovation and encouraging forward-looking decision-making will rely on the provision of knowledge and information and the existence of an enabling institutional framework, in order to enable people to take advantage of opportunities and respond to changing circumstances. As the case studies demonstrate, there is currently a lack of emphasis on the use of climate information in order to make medium to long-term decisions which take into account a range of possible scenarios. This is something which needs to be factored into future programming along with other socio-economic information.

Building resilience is a long-term process and cannot happen overnight. The current planning cycles of many development programmes are too short term and do not encourage the kind of interaction which is needed to build long-term resilience. Working alongside national governments, development programmes need to focus on long-term engagement with communities.

Building adaptive capacity at the local level has been shown to have an impact on World Vision's child well being outcomes. Developing children's ability to make good judgements about what to do in the case of disaster is essential in order to ensure that they are protected and safe from injury or illness. Providing people with assets and ensuring they have the knowledge and appropriate institutional frameworks to use these assets to ensure food and livelihoods security also contributes to children's wellbeing by ensuring they are healthy and well nourished. However the case studies show how greater emphasis is needed across World Vision's programmes in recognising the valuable role children can play in the development of their communities and children's participation should be built into all programme interventions which aim to build adaptive capacity.

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