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Design, monitoring, and evaluation in a changing climate: Lessons learned from agriculture and food security programme evaluations in Asia



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Acronyms and Abbreviations

AFS	Agriculture and food security
CCA	Climate change adaptation
DME	Design, monitoring and evaluation
DRR	Disaster risk reduction
FCFA	Food for cash / food for assets
IFAD	International Fund for Agricultural Development
JCCI	Joint Climate Change Initiative
M&E	Monitoring and evaluation
NRM	Natural resource management
ToR	Terms of reference
WFP	World Food Programme

Evaluation Reviews are short papers highlighting and/or distilling 'lessons learned' from a selection of evaluation reports that are relevant to M&E of climate change adaptation.

Introduction

Some of the greatest challenges for Climate Change Adaptation (CCA) practice relate to the connected themes agriculture, food security, and rural livelihoods. Asia is home to 87% of the world's 500 million smallholder farms (Thapa and Ghaiha 2011), for whom the risks posed by climate change are significant and urgent.

This paper is the first in a series of SEA Change / UKCIP Evaluation Reviews, which are intended as short briefs highlighting and distilling findings from published evaluations of climate change-related programme interventions. This first paper is aimed at sharing some design, monitoring, and evaluation (DME) 'lessons learned' that are pertinent to CCA, which have been drawn from a small selection of agriculture/food security (AFS) programmes across Asia. The paper is organised into five sections. We begin with a brief overview of climate change in Asia and the implications for agriculture and food security, and discuss the purpose, audience, and methodology of this paper. We go on to outline short synopses of the four example programmes, and derive key lessons that are pertinent to those monitoring and evaluating climate adaptation interventions. We close with concluding remarks and recommendations.

Overview of agriculture, food security, and climate change in Asia

"Agriculture is highly sensitive to climate change. Even a 2°C rise in global mean temperatures by 2100... will destabilise current farming systems (Easterling *et al.* 2007).

Climate change has the potential to transform food production, especially the patterns and productivity of crop, livestock and fishery systems, and to reconfigure food distribution, markets and access (Nelson *et al.* 2009)."

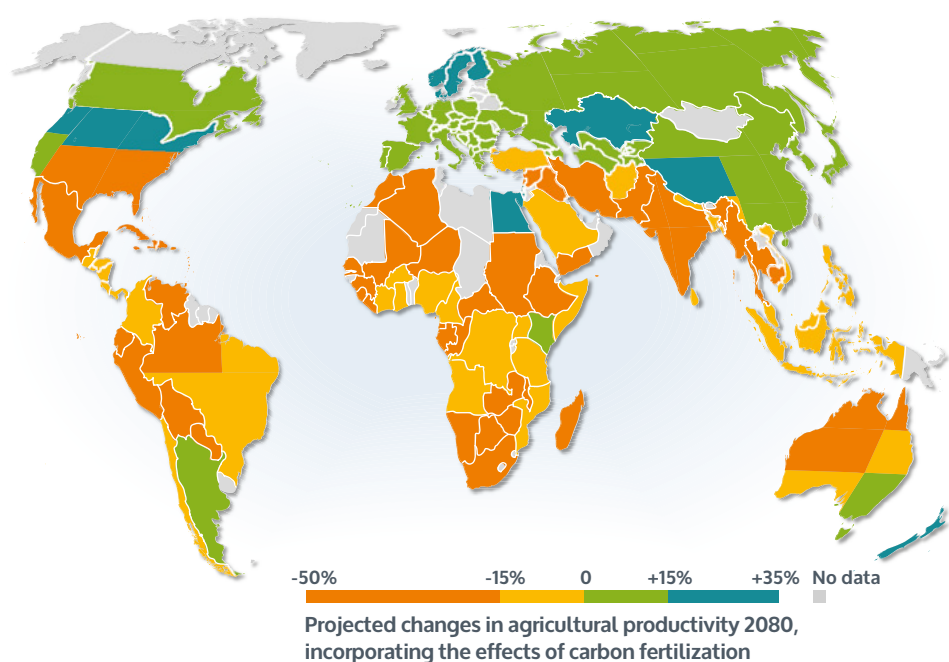
Vermuelen *et al.* 2010: 4.

Climate-related hazards and extreme weather already compromise rural livelihoods and agriculture in Asia. The World Food Programme (2013) identifies Asia as "global ground zero for natural catastrophes" (p. 1), and it estimates that 84% of natural disasters worldwide are climate-related. The size of the current food security challenge in Asia is emphasised by the fact that two-thirds of the world's food-insecure people live in the region, with 309 million (18.5%) undernourished people living in South Asia alone (2008–10 data, FAO 2013). In recent years levels of undernourishment have dropped in absolute terms and as a percentage of population, however the scale of the challenge remains huge.

Against this backdrop of existing food insecurity and extreme weather events, climate change has major implications for agriculture and food security in Asia. The Intergovernmental Panel on Climate Change (IPCC 2014) states with high confidence that, globally, extreme climate and weather events will reduce food production. In Asia, the same report indicates, with medium confidence, that "the impacts of climate change on food production and food security in Asia will vary by region with many regions to experience a decline in [agricultural] productivity" (IPCC WGII AR5 Chapter 24, 2014) The example of rice is cited, where a number of regions are already near the heat stress limits for rice production. Figure 1 illustrates projected changes in agricultural productivity by 2080 due to climate change and emphasises significant losses in productivity, especially in Southern Asia.

Agricultural yields are extremely sensitive to fluctuations in temperature or precipitation, and there is concern that traditional farming practices may not be suited to emerging climate contexts. For example, many smallholder farmers in Asia are dependent on rainfall and cannot afford extensive irrigation or other infrastructure that would equip them to cope with erratic precipitation, much less extreme weather events. In addition to threatening crop yields, climate change also undermines food security indirectly through disruptions to the systems and infrastructure that people use to access food (Tyler *et al.* 2013). Such impacts are likely to be reinforced by population growth and may trigger significant socio-economic and environmental changes across the region.

Figure 1. Projected changes in agriculture by 2080 due to climate change. Ahlenius 2009.



"The adaptive capacity of rural and urban communities confronted by economic and social shocks and changes is enormous, but needs ongoing, robust support (Adger *et al.* 2007). Climate change will bring further difficulties to millions of people for whom achieving food security is already problematic, and is perhaps humanity's most pressing challenge as we seek to nourish nine billion people by 2050 (Godfray *et al.* 2010)." Vermuelen *et al.* 2010: 4.

Given current and expected future challenges, agriculture and food security (AFS) has emerged as a key CCA priority in Asia and the Pacific. Often, CCA represents a new perspective within existing agricultural programming, whereby vulnerabilities, risks and responses are considered in the context of a changing climate (even if specific technical options chosen may be well established in other contexts). Possible CCA strategies in the near term include the introduction of techniques and crops that are more resilient to changing or uncertain weather patterns; improving or installing irrigation and other infrastructure; diversifying the types of crops and livestock that are raised; encouraging non-farm income generation in rural areas; expanding the scope and reach of weather-index based insurance schemes; and the establishment of early warning systems. In many areas, enabling smallholders to cope with water insecurity is paramount, though specific hazards and risks vary considerably from place to place. Agriculture in Himalayan mountain villages, for example, would be heavily affected by changes in seasonal snow melt and glacial runoff patterns, and specialised interventions are needed to address that challenge.

Good practice in agriculture bridges agricultural science and local knowledge, but both are often challenged by climate change. CCA within the agricultural sector will require a detailed knowledge of how farming, fishery, and animal husbandry techniques interact with changing climatic conditions within specific local contexts. This can be challenging given the high level of uncertainty associated with projecting local impacts of climate change. This uncertainty is commonly attributed to the limitations of global climate models that may not provide sufficiently detailed projections at the local level. However, it should be remembered climate change is inherently uncertain and that the 'extreme events' which often concern decision-makers are, by definition, unusual and may be poorly understood. Climatic change is also likely to result in, and interact with, an unpredictable cascade of social, political, and economic changes. As Hinkel *et al.* (2013) explained, "individual or social capacities and external climate drivers are at least partly responsible for climate change impacts, but their interactions cannot be reliably simulated using computational models" (p. 12). We must therefore approach agriculture and food security with full awareness of the many uncertainties we are facing and recognise the importance of flexible responses which do not lock us into a 'single track' approach. Responses should be grounded in a specific analysis of the target population's vulnerability and resilience in the context of changing agricultural conditions.

Because CCA represents a new and evolving body of knowledge and practice, an evidence base is only beginning to emerge. One of the main reasons for this is that while many programmes claim 'relevance' to climate change, very few have been actively implementing interventions that are grounded in a coherent climate change vulnerability / risk analysis, and been operational long enough to distill a series of lessons learned towards DME. What we do have is a plethora of interesting and often innovative programmes examples. Programme evaluations represent an enormous body of applied research; however key lessons from them are not always effectively disseminated to broader audiences. This Evaluation Review aims to add to that body of knowledge.

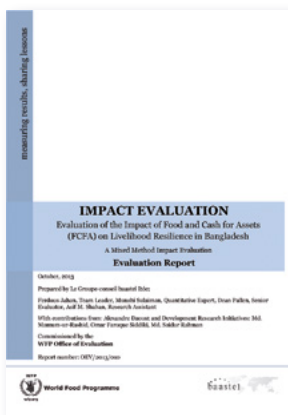
Purpose and methodology

This paper aims to identify some key lessons pertaining to CCA, which have been drawn from four AFS programmes in Asia. It is targeted at a professional, but not necessarily specialist audience – including programme managers, extension workers, knowledge managers, and M&E specialists actively engaged in AFS programming. CCA is an emerging field, and DME of it is "fraught with difficulties" (Brooks *et al.* 2011: 8). As a result, much of the literature about adaptation falls into two categories: very simple introductory overviews that serve a mass communications purpose, and highly technical documents. This paper is one of the few that falls in between, with the aim to provide a short, practical, and concrete paper pitched towards field-level practitioners.

This paper centres on four published AFS programme evaluations from Bangladesh, Cambodia, Timor Leste, and Vietnam. They have been selected for their relevance to climate change adaptation, their geographic spread across Asia, and the distinct perspectives they provide. This paper is not a systematic review or meta-evaluation, from which findings can be confidently and broadly generalised. Our scope is much more modest; the dissemination of practical examples and experiences for an audience of field-level practitioners.

Brief synopses

This section very briefly informs the reader about the four programmes from which the ‘lessons learned’ are derived. The four synopses below are our summaries, which select those elements relevant to M&E from a CCA perspective. Those who are interested in a more detailed overview of the programmes and evaluation findings can access the original reports online.



Evaluation synopsis 1: Bangladesh

Evaluation of the impact of food and cash for assets (FCFA) on livelihood resilience in Bangladesh: A mixed method impact evaluation

Jahan, F., Sulaiman, M., Pallen, D., Shahan, A.M. (2013). World Food Programme

This evaluation specifically aimed to assess the impact of a World Food Programme (WFP) cash/ food for work/training initiative that fell within its ‘Enhancing Resilience to Disasters and the Effects of Climate Change’ portfolio. The programme sought to “contribute to the short-term goal of improving household food security; medium term goals of improving the biophysical environment, increasing agricultural production and improving livelihood options; and longer term goals of sustained improvement in livelihood resilience and ability to cope better in times of crisis” (p. 53). The methodology was a mixed-method impact evaluation based on document review, surveys, and qualitative research (focus group and interviews). Impact was determined by comparing data from target communities with comparable data collected outside the target area; significant differences between the two demonstrated measureable impact that could be attributed to the programme intervention itself.

The programme’s main activities were to enhance food security for the very poor by extending food or cash assistance in return for participation in skills training and/or manual labour in support of community infrastructure projects. Food security was thus stabilised in the immediate term through inputs of basic food and cash assistance, and in the medium term through improved livelihood skills. Moreover, the infrastructure projects had broad community-wide benefits which improved agricultural production and access to markets.

Jahan *et al.* indicated that the programme was meeting its goals and making critical contributions to improving life circumstances and reducing vulnerability of the very poor in the programme area. However, the team did not measure statistically significant impact on long-term goals. While this programme is included within a CCA portfolio, the evaluation itself did not assess its contribution towards this aim in detail.





Evaluation synopsis 2: Cambodia

Evaluation of the Joint Climate Change Initiative (JCCI) in Cambodia

Dahlgren, S., Christoplos, I., and Phanith, C. (2013)

The JCCI is a consortium that “is working to enhance the capacity among Cambodian non-government organisations and communities in order to reduce vulnerability of added threats that climate change poses to development” (JCCI 2013: para. 1). The JCCI is a new initiative that aims to enhance awareness of climate change among Cambodian civil society, and their capacities to address it through delivery of programmes that are better enabled to reduce vulnerability and promote adaptation. Working through its consortium member agencies, the JCCI focuses on rural communities, implementing projects to improve rural livelihoods, improve food security, and increase resilience to climate change (e.g. through adaptation projects for smallholder farmers and fishing communities). While JCCI is not a conventional agricultural development programme, its relevance to food security makes it an interesting example for this review.

Dahlgren, Christoplos, and Phanith’s evaluation is written primarily from an accountability perspective, i.e., how this programme is performing against its stated objectives and over-arching theory of change. It is based entirely on qualitative methods: document review, interviews, and field visits. Overall, the evaluation team praised JCCI for “changing the way a substantial number of civil society organisations work with climate change” (p. 26) through advocacy, awareness-raising, and skills-building. The evaluators found that the JCCI strategy was sound and appropriate, and that the programme was effective in engaging civil society and building its capacity regarding a human rights-based approach to climate change. However, the team raised questions regarding meaningful impact on climate vulnerability itself. This is an expected observation for a pilot programme focusing on capacity building, and the team made several programmatic recommendations to enhance the programme’s impact in its next stages. The recommendation of most interest to an M&E audience is that “a narrow, activity/output approach to results-based management... is counterproductive in anchoring ownership of a human rights-based approach” (p. 39). The authors suggest refocusing so that “efforts are designed within explicit and overarching theories of change that highlight the desired changes in policies, attitudes and practices governing how duty bearers (at national and local levels) respond to the risks faced by the most climate vulnerable populations” (p. 40).

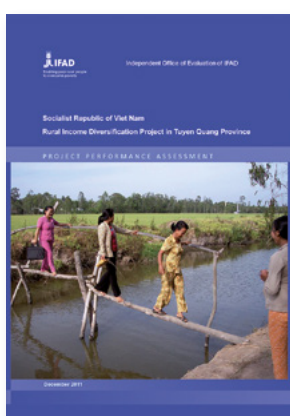


Evaluation synopsis 3: Timor Leste

Livelihood security in a changing climate: Insights from a program evaluation in Timor Leste Webb, J. and Dazé, A. (2011). CARE Australia

Webb and Dazé reviewed a portfolio of four Care Australia projects in Liquiçá District, Timor Leste, exploring their responses to climate change and contributions to adaptation processes. None were designed with an explicit CCA orientation. Nevertheless, the projects – which encompassed community-based disaster preparedness, drought mitigation, reduced vulnerability/increased resilience, and food security – were evaluated to consider “the effectiveness, impact and sustainability of CARE programming in Timor Leste in relation to climate hazards”¹ (p. 3). Thus, although the four projects were not designed as climate change adaptation interventions per se, climate change contexts infused the work. This evaluation does *not* have an emphasis of accountability, i.e., whether and how the projects performed against their stated results frameworks. Instead, it is a qualitative investigation of whether and how the projects might be re-oriented to address climate change considerations.

Webb and Dazé’s insightful report makes important observations about how the ‘side effects’ of agriculture/rural livelihoods programmes might very well influence vulnerability and resilience to climate change. Nevertheless, they indicate that climate change adaptation goals would be better served with a more nuanced and strategic approach which reflects the specificities of *varying* climate hazards and people’s differing levels of vulnerability towards these climate hazards.



Evaluation synopsis 4: Vietnam

Rural Income Diversification Project in Tuyên Quang Province IFAD Office of Independent Evaluation (2011). International Fund for Agricultural Development

IFAD’s Rural Income Diversification programme in Tuyên Quang Province aimed to “improve the socio-economic status of 49,000 poor households living in upland areas, especially ethnic minorities and women” (p. iv). This isolated and mountainous province in Vietnam’s far north is characterised by rugged terrain and high levels of poverty, and over half the population are ethnic minorities. The programme was not explicitly designed to address climate change adaptation, however this was taken into account as a key contextual factor. The evaluation was conducted by IFAD’s Office of Independent Evaluation, and its primary approach was accountability, i.e. how well the programme is meeting its intended aims, and is based on qualitative inquiry.

The programme sought to enable poor households (particularly ethnic minorities and women) to become less dependent on subsistence agriculture by diversifying their livelihoods through cash crops, livestock, and micro-enterprise development. Overall, the independent evaluators documented important successes and impacts of the programme. The evaluators particularly noted that it had been successful in reaching ethnic minorities and women, groups often identified as being particularly vulnerable and having unequal power, access and opportunities to develop coping mechanisms. Nevertheless, they did note that the program was somewhat generic in orientation, and argued that a good programme could be further improved by a more contextualised approach. Climate change adaptation was discussed as a contextual factor, but was not a focus of the evaluation itself.

¹ A hazard is a potential source of damage, harm or adverse effects on something or someone. Risk is the chance or probability that a person will be harmed or experiences an adverse effect if exposed to a risk source. Hazards develop into or are itself risk sources. Changing rain patterns can be seen as a hazard, intense rains in short periods of time are the risk source, flooding is the risk and damage to agricultural produce is a result or the impact of that risk.



CCA should be better integrated into DME frameworks

An overarching lesson is that climate change adaptation objectives would be better served if they were better integrated into programme design, monitoring, and evaluation, rather than simply referenced as 'context.' It is evident from the four examples that when DME frameworks and programme evaluation approaches are crafted to specifically assess contribution towards CCA, we are better able to learn from the resultant evaluation. Where external evaluators are used, this places an onus of the commissioning organisation to develop appropriate Terms of Reference (ToRs).

One of the chief barriers for deriving robust conclusions about climate change adaptation is that programme M&E frameworks and evaluation ToRs are not always designed to specifically address the topic. As a result, information is fragmented, findings are scattered, and strategies are not fully assessed. This greatly limits our ability to develop an evidence base regarding CCA interventions. Sterrett's analysis (2011) of Oxfam's CCA portfolio in South Asia observed:

Much of what many organisations now include in their climate change portfolios is work that has been around for many years, including, among others, DRR programming, natural resource management (NRM), and water management... Given that CCA programming is still in its infancy in the region, it has been difficult to assess the impact and success of programming. This is compounded by the fact that there is no recognised monitoring and evaluation framework in existence that looks specifically at CCA (p. 11).

Our review confirms this as an issue. The implications of climate change on human and ecological systems need to inform the design of both the programme and its M&E framework. The design would ideally include a theory of change or other explicit 'cause and effect' results models that would demonstrate how an intervention is expected to contribute to reduced vulnerability or increased resilience to climate change. This would frame the program objectives and, in turn, guide which indicators are selected. Even when an underlying analysis of CCA informed the design of the programmes reviewed, some of the evaluations themselves focused on delivery of results rather than on the overarching strategy vis-à-vis climate change adaptation processes. This should not be interpreted as a criticism of any particular agency or evaluation team; rather, it reflects the orientation and scope of many programme evaluations. However, it is difficult to build an evidence base or derive broad lessons about CCA experiences when the M&E frameworks and evaluation reports do not address it.

Some of the issues surrounding vague integration of CCA within agricultural and food security programming reflects broader trends. When CCA was first emerging, agencies sought to demonstrate a programme's 'relevance' to climate change, but lacked a unifying analytical or DME framework to do so. This led to many interesting and innovative approaches, but also a large number of programmes which were superficially 'packaged' as climate change adaptation but did not meaningfully address it. Christoplos, Novaky, and Aysan (2012) explained:

"Climate adaptation (and with that risk and resilience) components have been added to some new and older agricultural programmes. In many cases these components have not been accompanied by a fundamental rethinking of the implications of natural hazards for the design of these initiatives" (p. 8).

This finding reflects a situation in which climate change was being recognised as important, but there was uncertainty about what constituted adaptation or how it should be addressed in an M&E framework. As a result, while it has been relatively straightforward to assess whether or not programmes are meeting intended targets, the larger question of how a programme has influenced vulnerability/resilience to climate change has not been answerable because it was never part of the M&E framework itself.

If we are to truly harness evaluation research to support large-scale evidence-based learning and action on CCA, then M&E frameworks and evaluation ToRs must be explicitly designed to incorporate this. Other CCA experts have come to similar conclusions. Sterrett (2011), for example, commented at length on the difficulty of drawing conclusions from disparate programmes, particularly when evaluations and other documents were not designed to facilitate this. Webb and Dazé's review of four CARE CCA-relevant programmes in Timor Leste similarly noted that:

None of the four evaluated projects was designed explicitly to address climate change, but they had goals related to [it]... However, most project activities did not reflect the linkages between critical hazards and livelihoods. Given the importance of climate hazards in Liquiçá District and the risks they pose to food and income security, the evaluation concluded that activities could have achieved a stronger impact if they had more specifically designed responses in relation to relevant hazards (p. 5).

The IFAD independent evaluation team was not tasked to assess the programme in Tuyên Quang's contribution towards CCA; climate change was framed as a contextual factor. However, the programme strategy itself was consistent with what might be seen in a CCA programme. If a more explicit CCA orientation had been built into the M&E framework, IFAD may have been able to strengthen and improve this programme's contribution towards adaptation. The same could be said for WFP's Food and Cash for Assets programme in Bangladesh. Although the programme was a component of the WFP's overall 'Enhancing Resilience to Disasters and the Effects of Climate Change' portfolio in Bangladesh, the evaluation's emphasis was on other priorities. A critical step towards strengthening climate change adaptation programmes would be to design monitoring and evaluation frameworks that would support in-depth analysis to facilitate evidence-based learning. Such frameworks need to encourage openness, facilitate a process of reflection and be flexible. Those participating in the DME process should be comfortable in exploring what did or did not work and why, and there must be space and time to reflect on the findings. M&E efforts should be agile enough to enable an intervention to alter its course in response to what has been learnt. There are several excellent 'toolkits' and practical frameworks that have been published (see Bours, McGinn, and Pringle 2014 for summaries and reviews of them); those seeking step-by-step instructions should consult one or more of the tools and manuals reviewed.

DME approaches must acknowledge uncertainty

It is imperative to understand that uncertainty is an inherent characteristic of CCA; it is a factor that should be reflected in DME and in efforts to evaluate the flexibility of CCA interventions.

Detailed consideration of uncertainty is limited in the four examples, yet it is an important aspect in all cases. Firstly, there is uncertainty in our understanding of future climate change; global- or regional-level climatic projections cannot confidently predict or sufficiently inform climatic changes in detail at the local level. Some climatic changes can be more confidently anticipated than others, but even in such cases the extent and pace of change is often uncertain. Moreover, some localised climatic conditions cannot be predicted by global models, and there may be important *in situ* exceptions to larger trends. Secondly, exactly how these climatic changes will manifest as risks or impacts in different locations is dependent on a myriad of topographic, environmental, and socio-economic factors – thus generating further uncertainty.



AFS programmes should thus *be informed* by global and regional climate projections, but they also need to be flexible. To this end, analyses of climate change and agricultural conditions should be regularly reviewed and updated, and agencies should not be ‘locked into’ one strategy. M&E can play essential part of an iterative CCA process that accommodates uncertainty rather than seeks to eliminate it.

DME needs to take into account local climatic conditions

AFS programme strategies can be strengthened through a context-specific analysis of local climate hazards (current and potential), related risks, and agricultural conditions. Among our examples, there were differing degrees to which the programme strategies meaningfully reflected changing climate conditions. We would ideally like to see a coherent analysis of these factors within a programme area, together with an assessment of the implications for local agricultural and food utilisation practices. This analysis would frame the programme design, and its concomitant M&E framework. To this end, evaluation teams should be expressly tasked with exploring how an AFS programme strategy is responding to emerging climatic risks and conditions. A nuanced, explicit consideration climate change in AFS interventions means that simply listing climate change in the “risk” column of a logframe (or stable weather in the assumptions column!) is no longer tenable (Christoplos, Novaky, and Aysan 2012). General references to climate change or tropical storms is insufficient; a better approach would be a coherent, informed analysis of changing and uncertain climatic conditions in the target area, and the implications for agriculture on the local level.

Webb and Dazé’s (2011) evaluation especially demonstrated the importance of sensitive analysis of localised conditions and micro-climates, i.e., a localised area where conditions are consistently different from the surrounding one. The projects they evaluated in Timor Leste were in a mountainous area with varying terrain, but their point is applicable to other areas as well. Climate hazards and risks can be extremely localised, with enormous implications for agricultural production and the types of interventions that should be promoted. This might seem to be an obvious point, and yet programmes are still designed according to general conditions and strategies. Webb and Dazé make a pointed remark that “activities could have achieved a stronger impact if they had more specifically designed responses in relation to relevant hazards” and “reflect the linkages between critical hazards and livelihoods” (p. 5).

Dahlgren, Christoplos, and Phanith (2013) had a very different orientation to their evaluation, but similar conclusions can be derived from their paper. Their evaluation was largely positive regarding a Cambodian NGO consortium’s efforts to improve member partners’ capacities to address climate change. But, despite their assessment that the consortium was successful on a civil society engagement level, some local partners’ agricultural extension approaches seemed geared towards generic, top-down approaches to introduce new crops and modify rice cultivation techniques. It will of course take time for local partners to translate trainings into meaningful climate change adaptation strategies in the agricultural sector. At the time of the evaluation, however, such linkages were not always explicit or apparent. As the pilot programme matures, it is important that the next steps include enhanced strategy and practice, better tailored to the specificities of varying local agricultural conditions and adaptation needs. A similar point could also be drawn from IFAD’s rural income diversification programme evaluation. The evaluation team only made superficial reference to actual or anticipated climate changes, but they made similar arguments: that the agricultural extension strategy in Vietnam’s mountainous Tuyên Quang Province was generally sound and effective, but too generic: “the same activities were promoted in all project communities” (p. 27).

The programme could be strengthened with an approach that is more tailored to localised climatic conditions and agricultural practices. Such an approach would represent a significant departure from Vietnam's own patterns of centralised planning. This point highlights that addressing local adaptation needs is not just a matter of science (e.g. improved climate projections); it is also a question of governance and institutional commitment.

DME should be informed by differences in population vulnerability and resilience

It must also be understood that vulnerability and resilience to climate change are profoundly shaped by social structures and institutions. Adaptation strategies should reflect a nuanced analysis that captures how distinct groups within the population are affected differently. Be aware that the most vulnerable groups may be uniquely or differently vulnerable from the community at large – and from each other. The poorest and most marginalised often have weakest access to resources with which to effectively cope, and their needs may be missed in general 'community' interventions. As Dahlgren, Christoplos, and Phanith (2013) asserted:

Vulnerability is related to a range of factors, such as gender, land ownership, ethnicity and political affiliation. There is a danger that general references to community-based adaptation can distract attention from: (a) who, within these erstwhile communities, is vulnerable to a given climate risk and whether their risks have been reduced, and (b) who is excluded from these communities and therefore ignored by a given intervention. Efforts... should be designed based on gender aware risk and vulnerability mapping that actively questions the community concept and explores ways to address discrimination within communities and beyond a given set of rights holders (p. 40).

All four of the programmes reviewed in this paper targeted poor communities. They did not, however, always reach the most vulnerable people within these communities. Diverse populations were often approached with a homogenous orientation. As a result, certain groups 'fell through the cracks' – or simply did not benefit as much as intended. For example, WFP's ER programme in Bangladesh was strongly praised by the evaluators for appropriately targeting the very poor in general, and effectively engaging and empowering women across the programme. However, they noted important exceptions, e.g. female-headed households had difficulty participating. The evaluators of IFAD's programme in Vietnam similarly observed that while poor women and ethnic minorities had been effectively reached in general, the programme itself had a uniform approach across an area characterised by immense diversity in both terrain and population. They suggested that the programme strategy might be improved by better tailoring it to "the cultivation culture or daily life preferences of ethnic minorities" (p. 27). Webb and Dazé made compelling conclusions regarding Care Australia's four projects in Timor Leste:

The evaluation concluded that [the livelihood security] program impact to date is limited in part because vulnerability is not well understood. Despite regular reference to "vulnerable households" in project documents, the characteristics and criteria of vulnerability are not described, and differential vulnerability between communities, between groups within communities and within households has not been well analysed. Overall, the evaluation found that analysis for project planning needed to better explore the relationships between hazards and the particular vulnerabilities of women and poorer households. Without this understanding, project design could not reflect how different shocks and stresses might be affecting particular groups or households differently. (p. 5)



Although the evaluations were drawn from different countries, contexts, and programme strategies, they all made similar calls for better and more incisive social analyses. Terms like 'poverty,' 'vulnerability,' 'resilience,' and 'community' need to be unpacked and clearly defined, and adaptation strategies should be designed and evaluated to reflect critical consideration of social stratification. As Sterrett (2011) asserted, "good practice means targeting and working with the most vulnerable, including women and socially-marginalised groups... because of their high dependency on climate-sensitive resources and their lack of access to the material, social, political, and economic resources that would enable them to adapt to climate change impacts" (p. 4–5).

An evidence base on climate change adaptation is only just emerging, but there is strong consensus that good adaptation is founded on an incisive consideration of how climate change interacts with issues of social justice and can act to exacerbate existing vulnerabilities. Different people will be affected differently, and their vulnerability and resilience is framed by socio-economic circumstances – not just climatic ones. Approaches to adaptation should be grounded in a *differentiated* analysis of how vulnerability to climate change is compounded by poverty, power, and inequality. This should be reflected in the design of a programme, and its resulting M&E framework. This raises the critical question of '*whose voice is heard*' during the DME process, a factor that requires careful consideration at an early stage in the process. Participatory M&E techniques such as those put forward in CARE's PMERL methodology can be valuable in this context. However participatory monitoring and evaluation "is not just a matter of using participatory techniques within a conventional monitoring and evaluation setting. It is about radically rethinking who initiates and undertakes the process, and who learns or benefits from the findings" (IDS 1998: 2).

Conclusion

This Evaluation Review has given a brief overview of challenges and opportunities surrounding the DME of AFS-focused programmes with reference to climate change. We have examined four AFS programme evaluations from across Asia, with an eye towards identifying DME lessons that would be of interest to a CCA audience. In doing so, we have emphasised the need to better integrate CCA from the beginning of the DME process.

According to the WFP (2013), “more than 84 percent of natural disasters are climate-related, and Asia is the global ground zero for natural catastrophes” (p. 1). This has enormous implications for agriculture and food security across the continent. The Asia/Pacific region is also home to 803 million people, 41% of whom are employed in agriculture (ESCAP 2011: para. 1). There is a consensus that climate change is transforming the context of rural development across Asia and the Pacific; however, there are divergent perspectives on what the implications are for AFS strategies. CCA does not necessarily call for a discreet or distinct body of programming; however it does call for strategies to be refined to accommodate changing and unpredictable circumstances. Programme design would thus be grounded in an underlying analysis of climate change itself, which would in turn consider both the implications for agricultural production as well as social, economic, and political repercussions.

Hinkel *et al.* (2013) asserted that: “the two fundamental [M&E] questions are, ‘have we done things right?’ (that is, the things we said we would do...) and ‘were they the right things?’ (how relevant were they? Will they enable us to be less vulnerable or adapt better?)” (p. 53). One of the common threads that we see in the four example evaluations is that there is much greater confidence surrounding the first question than the second. Even when a programme was achieving its performance aims, it was not always clear if or how doing so addressed vulnerability and resilience to climate change. This observation is consistent with those made by other authors; Sterrett (2011), for example, discussed the many challenges of identifying clear ‘lessons learned’ across an eclectic multi-sectoral portfolio of CCA programmes, particularly when M&E frameworks were not designed to explicitly facilitate analysis of adaptation processes. Hinkel *et al.* went on to argue that “a third question might be, ‘how should we measure these things?’” (p. 53). Methodologically speaking, CCA does not easily lend itself to global or standardised indicators. Spearman and McGray (2011) argued that indicator selection and M&E frameworks should be built “based on the relationship between planned adaptation activities and the socio-economic, environmental and climatic context in which they will be implemented” (p. 8). The M&E framework itself should be updated periodically to reflect emerging conditions and new knowledge, and evaluators should be tasked with assessing a programme’s overall contribution towards adaptation, not just performance benchmarks. A ‘theory of change’ framework may be a useful tool to facilitate evaluations that are more analytic and address larger questions of overall strategy and contribution toward CCA.

Climate change poses enormous risks to agriculture and food security across Asia and beyond. It is clear that adaptation actions are urgent. Fortunately, there is also important progress being made to adapt to climate risks across the region. M&E can and should play a central role in identifying lessons from the emerging adaptation practice, but this will only happen if M&E is integrated within an iterative adaptation process and is considered at during the design phase of projects and programmes.



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