

Organizational Learning for Climate Change  
Adaptation: A Case Study of Four NGOs in India

by

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## ABSTRACT

For a country like India which is highly vulnerable to climate change, the need to focus on adaptation in tandem with traditional development is immense, as the two are inextricably tied together. As a prominent actor working at the intersection of these two fields, NGOs need to be prepared for the emerging challenges of climate change. While research indicates that investments in learning can be beneficial for this purpose, there are limited studies looking into organizational learning within NGOs working on climate change adaptation. This study uses a multiple case study design to explore learning mechanisms, and trace learning over time within four development NGOs working on climate change adaptation in India. These insights could be useful for development NGOs looking to enhance their learning to meet the challenges of climate change. More broadly, this research adds to the understanding of the role of learning in climate change adaptation.

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## **Chapter One**

### **Introduction**

As one of the most vulnerable countries to climate change in the world and home to one-third of its poor, India has an immense need to invest resources in climate change adaptation. However, adaptation for climate change must not occur in isolation from the existing mainstream developmental programs which already aim to protect the most vulnerable populations in the country. Globally, NGOs are among the most significant non-state actors already working at this intersection of climate change adaptation and development (Tschakert and Dietrich 2010; Ireland 2012).

Simultaneously, research indicates that in order to meet the uncertainties and complexities of climate change adaptation, constant reflection may be required which can gain considerably from theories and practices of learning (Ensor and Harvey 2015; Tschakert and Dietrich 2010; Storbjork 2010; Collins and Ison 2009; Pelling et. al 2008). Emerging literature on this aspect of adaptation has often concentrated on social learning derived from psychological and sociological roots (Ensor and Harvey 2015; Tschakert and Dietrich 2010; Pelling et. al 2008), but limited attention has been paid to learning within specific organizations such as NGOs that work on climate change adaptation. One question to ask here is that if learning is important, how do NGOs learn?

The objective of this research study is to explore how learning for climate change adaptation occurs in traditional development NGOs in India that have expanded into the climate change adaptation space. Given the interlocking nature of the challenges in the two fields, learning theories can enrich our understanding of how development NGOs can

navigate this dynamic space. This research uses organizational learning theory that comes from management literature, together with insights from social learning for climate change adaptation in order to delineate the learning mechanisms that are used by four such NGOs, and trace how learning occurs over time.

The following research questions are addressed in this thesis:

**1) Learning mechanisms and practices:**

- a. What is the range of learning mechanisms and practices used for climate change adaptation across these 4 NGOs?
- b. What is the role of individuals within these NGOs in the process of learning about climate change adaptation?
- c. What is the role of networks and partnerships in learning processes?
- d. What is the link between learning-teaching and how do they shape each other?
- e. What are the challenges to learning?

**2) Learning over time:** How has learning for climate change adaptation occurred over time in development NGOs that are now working in the climate change adaptation space?

Ultimately, the underlying motivation behind this study has been to understand how NGOs might improve their learning to keep up with the shifting ground realities in the era of climate change. This thesis does not attempt to find direct evidence to answer this question, but hopes to provide insights that might be useful for NGOS to enhance their learning for climate change adaptation

The four development NGOs chosen for this research study have all recognized climate change explicitly as a theme or area of focus for their work in varying capacities. They represent a wide diversity of characteristics in terms of their age, geographical area and focus of work, and the kinds of practices they employ, making each one unique from the others. This diversity allowed the researcher to explore similarities and differences in learning across a range of NGOs, and contribute to the larger discussion on the importance of learning for climate change adaptation under different contexts. The four NGOs selected are briefly described below. They are discussed in more detail in one of the later chapters.

Development Alternatives (DA) was founded in 1983. The NGO approaches climate change adaptation for grassroots communities from the perspective of natural resource management and collaborates with national and international partners for dialogue on climate action and justice.

Founded in 1975, Gorakhpur Environment Action Group (GEAG) concentrates on urban, peri-urban and rural climate change resilience in and around the city of Gorakhpur and eastern Uttar Pradesh, collaborating with local stakeholders

Intercooperation for Sustainable Development (ICSD) registered as an independent organization in 2010 and in climate change adaptation works largely in providing support to state governments across the country for their State Action Plans on Climate Change (SAPCC).

Practical Action (PA) is a large UK-based NGO that expanded into India in 2013 and comes into climate change adaptation from the perspective of disaster risk reduction

(DRR). The NGO's consultancy branch provides advisory services in India on agriculture and disaster risk reduction with climate change as a cross-cutting theme.

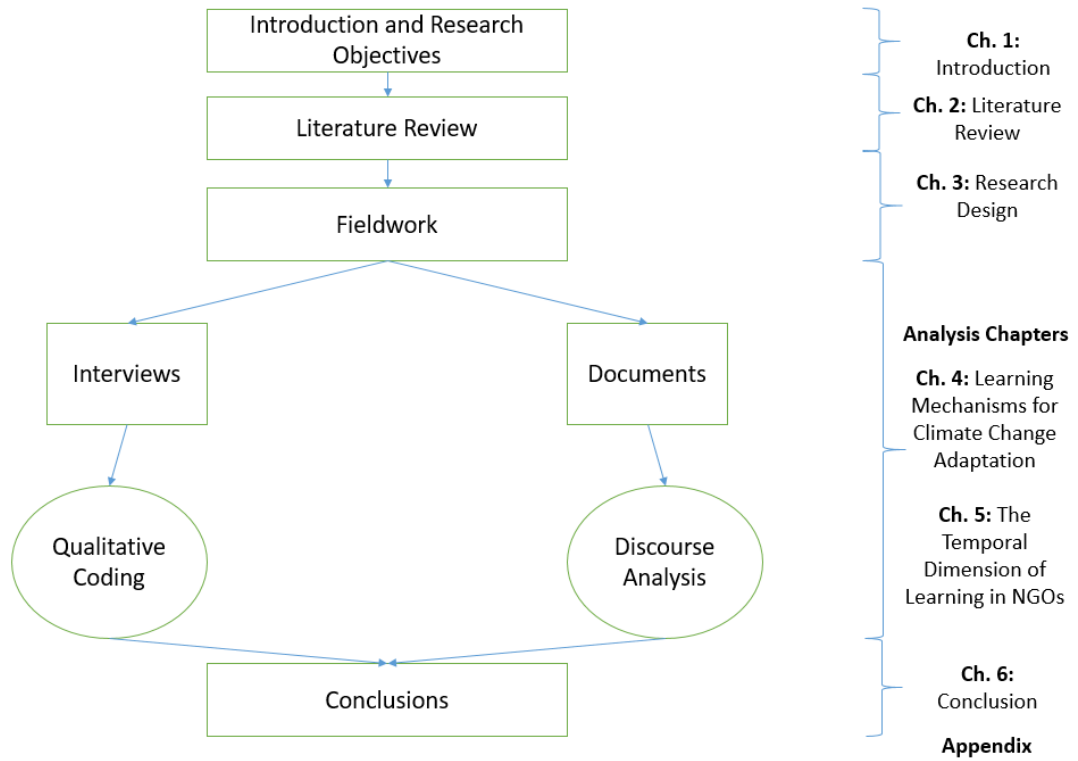
Overall, the four NGOs described above have a wide diversity in the timescale of their involvement in India, work at different geographical scales from the local to the global, and approach and understand climate change adaptation through different themes and concerns such as natural resource management or disaster risk reduction. Collectively, the differences in the characteristics of the NGOs are useful in mapping similarities and differences in learning mechanisms and practice across diverse circumstances.

## **1.1 Thesis Overview**

Following this introduction, the thesis is divided into five chapters. Chapter 2 is the literature review that discusses literature on organizational and social learning, positioning this research study against the current understanding of learning in the field on climate change adaptation. Chapter 3 discusses the design of this research as an exploratory comparative case study that utilized qualitative interviews and discourse analysis of NGO documents. Chapters 4 and 5 primarily outline the findings of this research study. Chapter 4 looks into learning mechanisms and practices, and the intersection of teaching and learning for all four NGOs. It also discusses the role of individuals, networks and partnerships in the learning process. Chapter 5 provides an understanding of the dimension of time in learning about climate change adaptation in NGOs. Chapter 6 concludes the findings of this research. The appendix contains supplementary material that was used during the course of this research study.

The following diagram provides an outline of this thesis:

**FIGURE 1: THESIS OUTLINE**



## **Chapter Two**

### **Literature Review**

Climate change is now well-recognized as a multi-faceted issue with socio-economic and environmental consequences that are likely to have greater effects on developing countries (Tschakert and Dietrich 2010) where resources are scarce and poverty is rampant (Clarke and Cruz 2014). In India, studies indicate that climate change will exacerbate existing inequalities through grave impacts on agriculture, water, health, sanitation, infrastructure and energy, as well as on natural ecosystems (Ravindranth, Chaturvedi and Kattumuri 2014).

The climate risks that vulnerable people are beginning to face, and the ways in which they respond to those risks are inextricable from a country's demographic, cultural and economic landscape (Ravindranth, Chaturvedi and Kattumuri 2014). Hence any attempts at building the adaptive capacity of actors must take into account the pre-existing structural factors involving institutions, governance and power dynamics in a country (Brown and Westaway 2011; Adger et al. 2005). Since the responsibility of protecting vulnerable populations has already been taken up by state and non-governmental agencies in the traditional development space, there is a growing consensus that the additional challenges of climate change should also be undertaken by the same actors (Ravindranth, Chaturvedi and Kattumuri 2014). Operating at the intersection of traditional development and climate change adaptation, these actors must create spaces for engagement between these two fields (Ravindranth, Chaturvedi and Kattumuri 2014; Tschakert and Dietrich 2010; Lemos et al. 2007).

When it comes to climate governance at various scales from the global to the local, non-state actors such as NGOs have already been performing a variety of functions that include agenda setting, influencing decisions, proposing solutions, providing information and expertise, evaluating consequences, taking mitigation and adaptation action, raising awareness, representing public opinion, and representing marginalized populations (Nasiritousi, Hjerpe and Linner 2014). Literature suggests that the placement of NGOs is often ideal for them to act as ‘bridging organizations’ (Edwards 1997) that facilitate and negotiate relationships between grassroots communities and other actors involved in a multi-level issue such as climate change (Arevalo, Ljung and Sriskandarajah 2010) This role for NGOs may become even more demanding for the amorphous issue of climate change adaptation, where ground realities shift rapidly, and response strategies must accordingly morph to accommodate them.

The shifting nature of climate change adaptation is discernable in the changes that its academic definition has undergone. Earlier understood as ‘an adjustment in ecological, social or economic systems in response to observed or expected changes in climatic stimuli’ (Adger, Arnell and Tompkins 2005), adaptation to climate change can now be seen as a ‘socioinstitutional process that involves cycles of anticipation and response to a variety of stressors’ (Tschakert and Dietrich 2010). It is now generally believed that climate change adaptation requires constant learning, relearning and reflection in the face of uncertainty and complexity (Tschakert and Dietrich 2010; Wise et al. 2013). Hence, at the intersection of development and climate change adaptation challenges, NGOs may be required to undertake reflective knowledge seeking, and a constant re-evaluation of their

approaches and activities (Tschakert and Dietrich 2010) in order to be successful facilitators (Madon 1999).

This means that NGOs in the development space must be adaptive, flexible, and anticipatory in their role as the bridging organization providing sustained support to grassroots communities and other diverse groups (Clarke and Cruz 2014; Edwards 1997). While NGOs' decisions are constantly influenced by their entrenchment in national and international discourses, and their interactions with local communities (Lewis and Madon 2004; Bebbington 2004; Ebrahim 2001), recent research indicates that several NGOs are beginning to see climate change adaptation discourses as an opportunity to reduce their dependency on the increasingly problematic aid system within which they currently function (Ireland 2012). Accordingly, existing NGOs may be able to utilize emerging adaptation discourses to transform themselves as development actors (Ireland 2012) by proactively seeking new and previously unexplored opportunities and pathways (Lervik, Fahy and Easterby-Smith 2010)

Research indicates that organizations attempting to stay effective in rapidly shifting scenarios may benefit from conscious efforts at organizational learning (Madon 1999; Edwards 1997; Kelleher, McLaren and Bisson 1996). In fact, Edwards (1997) believes that the only way for NGOs to successfully navigate 'in the messy, complex and unpredictable world' that they operate in may be through investment in learning. Since climate change is inherently uncertain and complex, learning may offer insights for existing NGOs working in adaptation.



Research on learning for climate change adaptation is still limited and comes largely from the perspective of social learning. Adding insights from this literature to theories of traditional organizational learning provide a roadmap for exploring how NGOs learn for climate change adaptation, and what barriers need to be overcome for NGOs to become effective learning organizations. The rest of this chapter explores learning in the context of climate change adaptation, delineates the learning mechanisms suggested by literature for how NGOs learn, discusses the loops of learning that might guide an understanding of learning effectiveness, and enlists learning barriers that might come in the way of this effective learning for NGOs. Taken together, this lays out a roadmap for meeting the objectives of this research study: exploring learning mechanisms and practices that developmental NGOs in the climate change adaptation space utilize, understanding how this learning occurs over time, and how this learning may be made more effective.

## **2.1 The Learning NGO for Climate Change Adaptation**

Originating from the work of Argyris and Schon, organizational learning has been a key concept in organization and management literature in the past few decades (Argyris and Schon 1978; Berends and Antonacopoulou 2014; Engstrom and Kerosuo 2007; Crossan, Lane and White 1999; Mirvis 1996). Traditionally, organizational learning is understood to have occurred when an organization encodes or routinizes the inferences it obtains from its experience (Levitt and March 1988) into processes that influence behavior (Mirvis 1996). In more general terms, learning can be defined as ‘relatively enduring alteration in behavior resulting from experience’ (Holden 2008) or even ‘transformation in the potential for behavior’ in response to experience (Pelling et. al 2008). At the heart

of the concept of an organization that learns is an interplay between the individual whose learning is enabled or inhibited by the organization, and the organization itself acting as an entity that learns when the shared experiences of individuals define the organization's performance as a whole (Pelling et. al 2008). Hence learning that takes place at each of the individual, group and organizational levels is influenced by learning at the other levels (Crossan, Lane and White 1999).

Within climate change adaptation, discussions of social learning are seen as fruitful for engaging a variety of diverse stakeholders who may then build shared adaptive capacity to reduce their vulnerability towards particular climate risks, or alter the resilience of their socio-ecological system (Ensor and Harvey 2015). This literature on social learning points towards certain characteristics for being effective learners in the context of the challenges of climate change.

Such learning needs to be iterative and reflective (Ensor and Harvey 2015) in order to facilitate the types of experimentation and re-evaluation (Holden 2008) needed to cope with 'non-linearities and other types of uncertainties and surprises' that will become more frequent with climate change (Tschakert and Dietrich 2010). It needs to encourage collaboration and co-creation of knowledge in shared spaces, while acknowledging the 'tyranny of participation' - the idea that power and conflict is underlying in any participation (Tschakert and Dietrich 2010). In an environment conducive to learning, this acknowledgement allows the voice of the socially and/or economically marginalized communities to be heard (Ensor and Harvey 2015). Keeping the above characteristics of effective social learning in mind, Tschakert and Dietrich (2010) suggest the creation of

spaces where learning can be pursued deliberately in order to build adaptive capacity against climate risks.

It is in such learning spaces that actors such as NGOs may find themselves useful as boundary organizations facilitating action and reflection for diverse stakeholders (Tschakert and Dietrich 2010). According to Pelling et al. (2008), these spaces are equivalent to communities of practice (COPs), which are shared domains for collective learning that may cut through formal boundaries of organizations, and allow organizations to learn through innovation, communication and reflection. In this particular interpretation of learning, characteristics of social learning and organizational learning come together and the organization thereby functions as a 'community of communities of practice' (Fox 2000). Tschakert and Dietrich (2010) suggest that learning spaces for climate change adaptation can be where awareness about climate change is built, past experiences are reflected upon and information shared to create planning outcomes that can manage change.

The literature on social learning for climate change adaptation provides a foundation for understanding what organizational learning for climate change adaptation might look like. Based on the literature on organizational learning in both for-profit and non-profit sectors reviewed for this thesis, NGOs can be seen to learn through a combination of learning mechanisms which dictate how knowledge is entered into or rejected, reflected upon and utilized by an NGO. The following learning mechanisms have been collated from literature for the purposes of this thesis: direct learning, indirect learning or learning through interaction, learning from assessment, and learning over time and through the

organizational memory. Each of these learning mechanisms are discussed in detail below.

### **2.1.1 Direct Learning**

Direct learning is ‘learning through doing’ or experiential learning (Levitt and March 1988) in which individuals in an NGO learn while working with grassroots communities (Edwards 1997), or other stakeholders often in the learning spaces where NGOs are usually facilitators (Tschakert and Dietrich 2010). For an NGO, direct learning lays the foundation for all other forms of learning. The other mechanisms of learning will be defective without direct learning (Edwards 1997). This form of learning occurs largely at the level of the individual who becomes a potential for changing the ways in which development is undertaken within NGOs (McKinnon 2007). This experience and understanding of an individual is where organizational learning begins, and to which it must come back for learning to be effective (Kelleher, McLaren and Bisson 1996).

For individuals engaged in direct learning, the social environment and the existing institutional framework may both dictate the actions taken on the ground, and hence influence the learning that is ultimately absorbed by the organization (Pelling et. al 2008).

An NGO may engage in direct learning through exploitation of pre-existing methodologies and approaches, or exploration of new and previously unexplored strategies (March 1991; Levitt and March 1988). Therefore there is an inherent incompatibility as NGOs decide how to invest time and resources between exploration and exploitation, and paying attention to the interplay between the two becomes important for an organization looking to navigate changing environments (Gupta, Smith

and Shalley 2006; March 1991). Since exploration and exploitation both self-reinforcing processes that require different mindsets and routines, being mindful of when and how they engage in these processes can lead to NGOs learning to better manage their interplay (Gupta, Smith and Shalley 2006) for climate change adaptation.

### **2.1.2 Indirect learning or Learning through Interaction**

Levitt and March (1988) define the process of learning from the experience of others, as a means for diffusing those experiences within a community of organizations. In the world of NGOs, such learning occurs away from the grassroots or the field and may take place in two ways. When it occurs internally within the organization, indirect learning involves dialogue and reflection between NGO employees, and leads to the development of common frames of reference for collective problem-solving (Lidskog and Ugglå 2009, translated). In occurring external to the organization, indirect learning takes place through organizational networks or in partnerships with other actors (Nasiritousi, Hjerpe and Linner 2014; Tschakert and Dietrich 2010).

In indirect learning, an NGO utilizes *language* to incorporate elements from the experiences of individuals and groups into the fabric of the organization as a whole (Crossan, Lane and White 1999). For NGOs, learning from internal and external experiences may both challenge their judgments, improve perceptions of field realities, strengthen feedback loops, and promote an overall culture of learning (Edwards 1997). Moreover, indirect learning between partner organizations can allow for mutual learning between organizations immersed in diverse contexts, creating new opportunities and developing the assets of organizations (Ameli and Kayes 2011).

### **2.1.3 Learning from Assessment**

Assessment is an integral part of any NGO that is largely carried out through Monitoring and Evaluation (M&E) (Mueller-Hirth 2012; Verkoren 2010) which includes any activities that are ‘used to assess organizational performance and meet the needs of diverse stakeholders’ (Marshall and Suarez 2014). Monitoring is the process through which a project is continuously tracked, whereas evaluation is ‘a periodic assessment of the outcomes, efficiency and impact of a project’ in order to draw lessons from it (Mueller-Hirth 2012). Intuitively M&E seems like a powerful tool for NGOs to learn how to be more efficient at what they do. However, the activity is often seen as problematic by researchers and practitioners including NGO employees, mainly due to the unbalanced relationships where donors and northern NGOs exercise power by holding southern NGOs accountable (Mueller-Hirth 2012; Ebrahim 2005; Edwards 1997). Ebrahim (2005) calls this ‘accountability myopia’ that hinders NGOs from achieving their true objectives for those on the grassroots as they struggle to fulfill the outcome-focused M&E objectives set by their donors. Edwards (1997) calls instead for decentralized systems that support NGO employees in implementation as they see fit, without being asked to measure standardized outcomes derived largely from the donors’ perspective (Banks, Hulme and Edwards 2015).

Literature suggests that in the kinds of adaptation initiatives required for climate change, where there are shifting climate hazards and uncertain time frames, may require radical changes in the M&E practices currently utilized. NGOs may need M&E practices that allow them to use mixed and iterative monitoring methods, and participatory approaches

that can enable long-term learning, meeting the needs of ‘accountability to donors’ as well as truly ‘assessing the effectiveness of climate change adaptation over the long term’ (Fisher et al. 2015).

#### **2.1.4 Learning over Time and the Organizational Memory**

Learning involves the detection of some sort of progression or changes over time (Berends and Antonacopoulou 2014), hence temporal changes in behavior and discourse are indicative of learning having occurred in an organization. Time as a dimension of organizational learning has been amply explored in management literature in the for-profit sector, both implicitly and explicitly (Berends and Antonacopoulou 2014; Lervik, Fahy and Easterby-Smith 2010).

Berends and Antonacopoulou (2014) discuss the three dimensions of time that are significant for learning: duration, timing, and reflection on past, present and future. The duration over which learning happens is what allows an organization to acquire experience and new knowledge, and have the time to experiment and reflect. On the other hand, the timing of learning may matter because as learning unfolds over time, an organization may encounter emergent opportunities from its outside environment, or create others on its own in order to trigger learning internally (Berends and Antonacopoulou 2014). One way to understand the duration and timing of learning may be to study conceptual shifts over time in the discourses that are utilized by organizations to understand the realm of their work. Finally, learning may be stored in organizational memory and institutionalized within an organization’s routines in the form of documents, rituals and schedules. Nevertheless, employees continue to construct, deconstruct and

reconstruct meanings that are derived from both, the past, and from the anticipation of the future. In other words, the past may be continuously subjected to reinterpretation for an organization, and anticipation of the future (Berends and Antonacopoulou 2014) could be a useful tool for rehearsing for future climatic impacts (Tschakert and Dietrich 2010).

The memory of the organization is a powerful learning tool that plays a significant role in the institutionalization of routines and relationships, and may ultimately create the context through which the organization perceives all future events (Crossan, Lane and White 1999). An NGO is constantly making tradeoffs, consciously or unconsciously, about what knowledge to record, and how that knowledge should be conserved and retrieved (Levitt and March 1988). According to Edwards (1997), the learning process is like an 'iceberg' where the formalized documentation that is ultimately accessible for outsiders looking at the organizational memory represent only the small visible tip.

A number of factors may go into determining how and what kind of organizational memory an NGO maintains. Most NGOs function on limited resources for information storage and retrieval, and research indicates that NGOs may need to pay attention to maintaining a balance between their formalized organizational memory that is captured in documents or information systems, and other routines and rituals that develop over time (Lewis and Madon 2004; Edwards 1997). The NGO size may also impact organizational memory because larger and more complex NGOs may seek to develop newer ways of managing vast amounts of information (Lewis and Madon 2004). Ultimately, determining the relevance of information may require conscious reflection on part of the NGO, which



may be further complicated by the influence of the donor (Banks, Hulme and Edwards 2014)

It may be essential for an NGO to pay attention to its organizational memory for climate change adaptation, because while the experiential grounding that comes from an NGO's past is useful for developing strategies for dealing with climate stresses in the future on one hand, on the other, there is a danger of the past becoming obsolete and blocking the entry of new forms of knowledge into the organization in the rapidly shifting field of climate change adaptation (Tschakert and Dietrich 2010; Edwards 1997).

## **2.2 Loops of Learning and Why They Matter**

The learning mechanisms discussed above highlight that organizations are constantly learning, either consciously or unconsciously. Hence an NGO is always learning. If so, are there differences in the forms and quality of learning that an NGO undertakes, and is there any benefit in distinguishing between and reflecting upon different forms of learning? The loops of learning framework that comes from the seminal work on organizational learning by Argyris and Schon, and from the writings of the anthropologist and cyberneticist Gregory Bateson (Tosey, Visser and Saunders 2011), offers theoretical groundwork through which these questions for learning NGOs can be examined.

Learning in individuals and organizations alike occurs at three levels: single-, double- or triple-loop (Bateson 1973; Gupta 2016; Tosey, Visser and Saunders 2011; Ameli and Kayes 2011; Tschakert and Dietrich 2010; Arevalo, Ljung and Sriskandarajah 2010).

Single-loop learning is primary level learning in which organizations detect and correct errors in routines without questioning the underlying goals, values and strategies on how

to do things (Argyris 1999; Arevalo, Ljung and Sriskandarajah 2010). In second-loop learning, an organization critically examines the assumptions and variables underlying their strategies, with the purpose of not just ‘doing things right’ but also ‘doing the right things’ (Argyris 1999; Arevalo, Ljung and Sriskandarajah 2010).

The conceptualizations of triple loop learning are varied, and ambiguous to detect in practice but hint at learning that may be above and beyond single- and double-loop learning, and concerned instead with the underlying paradigms in an organization, or a system (Tosey, Visser and Saunders 2011). According to Bateson (1973) triple loop learning may require changes in epistemology, or even a profound reorganization of character or identity that goes beyond language. Accordingly, he warns of the inherent risk entailed in triple loop learning which has the potential to lead to the abandonment of the self, and challenges the notion that higher levels of learning are always better (Bateson 1973; Tosey, Visser and Saunders 2011).

The theory on loops of learning can be used to examine the evidence of learning, and assess its quality. Arevalo, Ljung and Sriskandarajah (2010) believe that concentrating on being higher learning loops may allow NGOs to unlock a potential for transformation, without worrying too much about the distinctions between double- and triple-loop learning. For an NGO facing the challenges of climate change adaptation, learning to learn iteratively through conscious reflection on loops of learning, might help navigate the messiness associated with the adaptation space (Tschakert and Dietrich 2010; Bloch and Borges 2002; Levitt and March 1988). NGOs cannot safely assume that similar actions will lead to similar outcomes in different circumstances (Edwards 1997). Being

conscious of loops of learning may allow them to reflect upon and strategize for the depth at which they must learn to successfully meet their goals for climate change adaptation at different points in time and space.

At the same time, NGOs must also be conscious of a number of other barriers that are likely to impede their attempts at being successful learning organizations.

### **2.3 Learning Barriers for NGOs**

The barriers that NGOs face in their quest to learn are numerous and challenging to overcome. Bebbington (2004) argues that NGOs are the ‘organized face of more deeply seated, networked forms of social action’ and cannot be understood in isolation from the context of these networks. As such, the barriers preventing NGOs from reaching higher learning loops are partly in-built into the NGO-donor system which requires NGOs to be action-oriented, and does not provide them with the time and resources to focus on learning (Arevalo, Ljung and Sriskandarajah 2010). Caught within the ‘accountability myopia’ that Ebrahim (2005) described, NGO’s may find that their commitments to the aid industry takes precedence over their accountability to local communities as they adopt the donors’ discourses (Banks, Hulme and Edwards 2015). This has created a culture of self-preservation within the NGO sector (Dennehy, Fitzgibbon, Carton 2014) where fulfilling project-by-project demands of donors often means that NGOs see the making of time and space for learning as a luxury (Clarke and Cruz 2014). Hence the inescapable donors’ requirements make it harder for NGOs to engage in organizational learning (Ebrahim 2005; Edwards 1997).

Moreover, NGOs are often driven by a sense of urgency (Schneiker 2015) to fulfill the demands of their ‘activist working style’ (Verkoren 2010) and may find themselves unconsciously concentrating only on first-loop learning, (Ameli and Kayes 2011; Arevalo, Ljung and Sriskandarajah 2010). On the other hand Schneiker (2015) in her study of humanitarian NGOs in high risk places demonstrates a lack of willingness to learn on part of the NGO when it may require a questioning of underlying assumptions about whether or not they are doing any good. This problem of self-criticality fits with Bateson’s warning against consciously pursuing triple-loop learning which may lead to a loss of sense of self (Tosey, Visser and Saunders 2011).

Nonetheless, identifying learning barriers is essential as it is the first step towards addressing them (Edwards 1997), and enhancing our understanding of learning for climate change adaptation in particular. Research indicates that the danger of discourse hijack that leads to merely relabeling existing projects under the climate change adaptation label in order to meet donor interests and maintain access to funding, may cause the continuation of existing toxic practices that plague the development sector, while creating a false sense of movement (Ireland 2012). However, there may simultaneously be reasons to be hopeful.

The emergence of the climate change adaptation discourse in the development space could be offering NGOs a breath of fresh air (Ireland 2012). Against this backdrop, deliberate organizational learning may be able to play a role in reducing gaps between discourse and practice in the relations that NGOs share with various stakeholders that they work with (Ireland 2012). Ultimately, such a paradigm shift in the development

space may be supported by conscious organizational learning (Ireland 2012; Bloch and Borges 2002). Hence, it is a worthwhile exercise to explore how organizational learning for climate change adaptation takes place within existing development NGOs in India.

#### **2.4 Where Does This Leave Us: Situating This Thesis Amidst the Literature Review**

The above literature review provides a sketch of what a learning NGO should look like for complex challenges in the field of development. Such an NGO will have flexible, decentralized units with joint accountability (Madon 1999), embedded in the local contexts in which they function (Arevalo, Ljung and Sriskandarajah 2010) but collaborating closely with networks and partners (Schneiker 2015; Ameli and Kayes 2011; Kelleher, McLaren and Bisson 1996). The NGO will acknowledge individual learning amongst all employees, even when employees may not see themselves in the role of a learner (Madon 1999). Finally, such NGOs will be exploratory, responsive, and embracing of uncertainty (Edwards 1997; Kelleher, McLaren and Bisson 1996).

However, literature also suggests that higher learning loops that may make development NGOs better learners is often impeded by internal and external barriers such as relationships with donors (Dennehy, Fitzgibbon, Carton 2014; Mueller-Hirth 2012; Verkoren 2010), and inability to reflect deeply beyond the urgency of the situations confronting them (Schneiker 2015). This may speak to a more general problem of obsession with the kind of problem-solving that NGOs are comfortable with, instead of embracing the unpredictability, disorderliness and high risk often associated with the kind of creative thinking that higher learning entails (Kelleher, McLaren and Bisson 1996).

The literature that provides the above sketch of learning NGOs in the Global South has concentrated largely on traditional development or peace NGOs. What is missing from this discussion about NGO learning is an understanding of how might an NGO attempt to learn about a complex and dynamic challenge such as climate change adaptation. This thesis takes the first step in filling this gap.

Moreover, discussions about learning over time are largely missing from studies of learning in NGOs. One way to capture learning over time is by studying conceptual shifts in discourse. For instance, the broad discursive shifts of the descriptive and isolating Women and Development (WID) discourses into Gender and Development (GAD) where the myriad social relations of gender were better explored, can be traced through specific conferences, papers and projects that changed the ways in which people talked about gender in the development space (Razavi and Miller 1995).

Similarly, understanding changes in the knowledge of climate change adaptation by development NGOs over time through the shifts in discourse captured in organizational memory, can provide insights into how organizational learning occurs over time. Such discussions have been largely missing from the literature on learning in the field of climate change adaptation, and might help deepen our understanding of learning.

This thesis contributes to literature on organizational learning for climate change adaptation by exploring the mechanisms of learning, and learning over time through discursive shifts in the NGO's understanding of climate change adaptation. Finally, through a discussion of loops of learning and learning barriers, it examines the potential for learning to be more effective for development NGOs working in adaptation. Overall,

this thesis hopes to begin a conversation about organizational learning in the ever-evolving field of climate change adaptation.

## **Chapter Three**

### **Research Design**

This chapter discusses the research design of this study, developed with the objective of exploring learning in NGOs in India at the intersection of traditional development with climate change adaptation. Given the exploratory nature of this study, the research design needed to be grounded in a logic of discovery where the researcher goes in without prior knowledge of what she will find (Luker 2008). This chapter first discusses how and why a multiple-case case study approach was chosen for this study, then explains the process for planning the fieldwork and the challenges of doing so. Finally, the chapter discusses the qualitative coding and discourse analysis methodologies that were utilized in this study.

#### **3.1 Case Study Design**

Case study approaches belong to a constructivist paradigm in which the truth depends on an individual's perspective (Baxter and Jack 2008). The qualitative case study approach was found most suitable for this research because it can most suitably capture organizational learning as a subjective experience in the specific context of climate change adaptation where research so far has been limited and is still emerging.

However, there are many different kinds of case studies available and the challenge of choosing which one is most suitable for a specific context depends on the research questions asked. The following table summarizes different case study types and the pros and cons of using them for each of them for this research:



**TABLE 1: CASE STUDY TYPES AND THEIR PROS AND CONS FOR THIS PARTICULAR STUDY**

Case Study Type	Pros and Cons
Explanatory Case Study	Explanatory case studies attempt to explain complex causal links in real-life interventions. Due to the lack of knowledge about the learning phenomenon in the context of Indian NGOs working in climate change adaptation, this research study could not be designed to test causal links.
Exploratory Case Study	This type of case study is used in the absence of a clear, single set of outcomes. It was found to be the most suitable case study type for this research, as this study was meant to be an exploration of a phenomenon with limited research to date.
Descriptive Case Study	A descriptive case study provides in-depth descriptions of interventions or phenomenon in specific contexts. Descriptive case studies are useful for providing “thick” descriptions in specific contexts, but since the larger aim of this study was to reach generalizable conclusions for the learning phenomenon, this design was not found to be entirely suitable.
Multiple-case Studies	Multiple case-studies are used for revealing similarities and differences in cases. In combination to being exploratory, the use of multiple-case studies adds the advantage of understanding learning across a spectrum of NGOs.
Intrinsic Case Study	The intrinsic case study approach is used to explain a case that is of interest due to its peculiarity, without contributing to theory building. Similarly, an intrinsic case study was unsuitable for this study, as learning is not assumed to be a peculiarity for these specific NGOs, but something that is more pervasive in the NGO realm and may require enhancement for climate change adaptation.
Instrumental Case Study	An instrumental case study concentrates only on theory building. In this approach, the case itself is only of secondary interest. Although theory building was the overarching purpose of this study, the specific NGOs were not considered relevant. One of the goals here was to engage with these specific NGOs and contribute towards the enrichment of their specific learning activities.

*Source:* Baxter and Jack 2008

After consideration of the above case study types, the exploratory multiple-case case study design was found to best complement the requirements of this research. Since so little is known about organizational learning in NGOs within the larger context of climate change adaptation, the research had to be exploratory in nature to create a preliminary sketch of what learning is and how it has evolved over time. Moreover, the diversity of multiple NGOs is useful for determining whether learning occurs in similar ways across diverse contexts, or whether it differs in any significantly fundamental manner. Hence four NGOs were chosen in order to represent a diversity of characteristics so that a broader and more generalizable picture of learning for adaptation in the context of development NGOs could emerge.

### **3.2 Fieldwork and Data Collection**

This section discusses the specific details of the fieldwork and data collection undertaken in this study. The primary research questions examined in this thesis can be divided into two major categories:

- 1) What are the organizational learning mechanisms utilized by the selected development NGOs engaging in climate change adaptation?
- 2) How does the phenomenon of organizational learning occur over time in these NGOs?

In order to address these two sets of research questions, the approach chosen involved conducting fieldwork to obtain qualitative semi-structured interviews and a range of relevant documents pertaining to climate change adaptation from these NGOs.

Semi-structured qualitative interviews with NGO employees were primarily used for addressing the first set of questions about learning practices because in any NGO, learning begins with individual employees who are hence best positioned to explain their organization's learning mechanisms, practices and challenges. The interviews in this study were often conducted 'in the field' i.e. in or around NGO offices, or at locations pre-determined by the interviewee. This format of fieldwork in physical spaces where the interviewee is comfortable talking about the organization was seen as essential to develop personal contacts beyond the reciprocity of the interview process, and to derive access to other forms of information, such as documents. The semi-structured nature of the interviews was essential as this was an exploratory study and it was desirable that the interviewee freely provide their insights and observations about learning.

The second set of research questions were addressed primarily through organizational documents with inputs from the qualitative interviews. Access to documents such as annual reports, process documents, outcome reports, monitoring and evaluation reports etc. was obtained either by requests made to employees after the interviews had been conducted, or through the NGO websites. As a form of organizational memory, documents can capture organizational learning over time, when it may not otherwise be visible to individuals such as NGO employees or other actors that they interact with who are embedded in their specific contexts. Through discourse analysis, documents become a source for identifying how organizations understand the concepts of climate change adaptation, and how this understanding may evolve over time. The argumentative form of discourse analysis used here captures how and which kinds of narratives gain prominence

as NGOs learn about climate change adaptation (Hajer 2006). The specifics of the discourse analysis are further discussed later on in this chapter.

Together, the interviews and documents provided different kinds of evidence allowing the researcher to examine different aspects of organizational learning. However, they both also feed into one another, which is why insights from one data set was used to inform the other.

### **3.2.1 Identifying NGOs and Planning Fieldwork**

The identification of the NGOs was done through a gatekeeper in the NGO Practical Action, who helped establish contact persons in four NGOs in India: Development Alternatives, Gorakhpur Environmental Action Group, Intercooperation Social Development and Practical Action India.

The four NGOs identified for this research were chosen because while they are all explicitly engaged in climate change adaptation in some capacity, and because they are a diverse set of organizations that differ in characteristics such as age, geographical focus, approach towards climate change etc. A general introduction to each of the NGOs is presented below:

**Development Alternatives (DA)** is the non-profit entity which is part of a conglomerate known as Development Alternatives Group that recognizes itself as a ‘research and action organization’ (A.5, A.17). Founded in 1983 and based in New Delhi, the NGO’s primary geographical area of implementation is Bundelkhand, a vulnerable and agrarian area spanning over seven districts in the states of Uttar Pradesh and Madhya Pradesh in central India (A.15). Development Alternatives recognizes Bundelkhand as their ‘karam bhumi’-

a place of work with cultural and religious significance where the NGO works regardless of their other projects (A.I). The NGO also works across most of north and central India on a project-basis, and collaborates with research and action groups in ‘South Asia, Anglo-phone Africa, and South East Asia’ (A.I). Through their global and regional partnerships, DA participates in the global dialogue on climate change and sustainable development (A.17). The NGO also provides support to national and state governments of various states for policies on climate change adaptation, among other subjects. Coming primarily from a background of natural resource management and social entrepreneurship, Development Alternatives has adopted climate change adaptation as one of their themes of work.

**Gorakhpur Environment Action Group (GEAG)** emerged in 1975 in the botany lab of Gorakhpur university in the city of Gorakhpur in Uttar Pradesh as a voluntary students group that conducted environmental campaigns and cleanliness drives in the city, and officially registered as an NGO in 1983 (B.I, B.1). Since then GEAG has continued to work in and around Gorakhpur on sustainable agriculture and natural resource management, slowly spreading to other parts of UP, along with a presence in New Delhi (B.I). The NGO has remained committed to the city of Gorakhpur, and through their participation in the Asian Cities Climate Change Resilience Network, launched by the Rockefeller Foundation, has now integrated climate change resilience in urban, peri-urban and rural areas with their pre-existing work.

**Intercooperation for Social Development (ICSD)** used to be the Indian branch of a Swiss ‘network of affiliates in 31 countries’ known as Swiss Foundation Intercooperation

which worked in natural resource management and sustainable agriculture (C.I, C.1). Since registering as an independent NGO in 2010, ICSD has focused on the thematic domains of rural livelihoods, governance and climate change. The NGO works in a number of states across the country, with their headquarters in Hyderabad, Telangana. In climate change adaptation, ICSD's contributions have largely been concentrated in providing supports to various states across the country for their State Action Plans on Climate Change (SCAP) which detail state-level adaptation and mitigation strategies (Ravindranth, Chaturvedi and Kattumuri 2014).

Founded in 1968, **Practical Action (PA)** is a UK-based NGO that into India in 2013. PA has been working as a provider of innovative services in areas such as renewable energy, business development, and community based development in countries across Latin America, Africa and Asia (D.1). The NGO's involvement in climate change adaptation primarily began through the field of disaster risk reduction (DRR) in developing and underdeveloped countries. In India, PA has established a limited field presence without any direct work in climate change adaptation. Practical Action's independent consultancy branch PAC provides consulting and advisory services in DRR and agriculture with climate change as a cross-cutting concern to government organizations, donors, businesses, and NGOs (D.I)

The following table provides a snapshot of their diverse characteristics:

TABLE 2: NGO CHARACTERISTICS

<b>NGO Characteristic</b>	<b>DA</b>	<b>GEAG</b>	<b>ICSD</b>	<b>PA</b>
<b>Nature of Organization</b>	Natural Resource Management (NRM)-based developmental organization with ‘social entrepreneurship’ roots	NRM-based development and advocacy organization	Focus on rural economy, governance and social development, and climate change	Climate change consultancy model, implementation through technological interventions
<b>Climate Change Adaptation Practices</b>	NRM and capacity building with focus on climate change communication	Resilience-based climate change adaptation in urban, peri-urban areas and rural areas	Capacity building and support to states preparing their State Action Plans for Climate Change (SAPCC)	Largely DRR-based climate change adaptation through implementation, capacity-building and advocacy
<b>Area of Operation</b>	Primarily Bundelkhand but with presence in many other states and the national government as a research and action NGO	Primarily in the city of Gorakhpur, spreads out to other parts of UP	Primarily Uttarakhand but supports multiple state governments across the country	Project(s) in the state of Odisha, consultancy-based office in New Delhi, international presence across Asia, Africa, South America
<b>Nature of Involvement</b>	Mostly national with international presence through networks and partnerships	Mostly state/regional, with national and international liaisons	National and state-specific focus	Active international actor in UNFCCC, small national presence in India
<b>Years of Operation</b>	Formed in 1983	Formed in 1975	Independent from its Swiss counterpart since 2010	Founded in 1968, present in India since 2013

The initial communication of the purpose of this research study, and the terms and nature of interaction with employees in each of the four NGOs was conducted by the gatekeeper on behalf of the researcher. The implications of having a gatekeeper for this process are discussed in the following section.

The fieldwork for this study was conducted over the first week of June 2016. It included face-to-face meetings with one or more contact persons from each of the four NGOs in New Delhi, India. On invitation, the researcher also travelled to Development Alternative's local field offices in the small towns of Orchha and Datia in the state of Madhya Pradesh. Additionally, two follow-up interviews were held over Skype: one with employees from ICSD's regional office in later June, and the other with one employee from PA's UK office in December.

### **3.2.2 Navigating the Challenges of Having a Gatekeeper**

While negotiating entry into organizations via gatekeepers, researchers must be aware of two factors: the gatekeeper's objective in facilitating the research study may require reciprocity; and by being the person of contact, gatekeepers essentially have the ability to set the boundaries of interaction for the researcher, deciding what information should and should not be made available for the study (Broadhead and Rist 1976).

In the case of this particular study, the gatekeeper was genuinely interested in knowing more about learning in their organization, and volunteered to assist in this study. Due to this the terms of reciprocity were clearly communicated from the beginning and the project could be conducted effectively. The researcher did not detect any direct influence on part of the gatekeeper to dictate the direction of the study due to any intentions related to reciprocity.

On the other hand, in the case of freedom of access, some difficulties arose during data collection because the gatekeeper had negotiated the nature of communication with other NGOs. Due to this, certain expectations of some of the NGO employees were



predetermined before the actual field visits, and a few challenges arose during the semi-structured interviews. Firstly, they were negotiated as ‘meetings’ and the use of the word ‘interview’ was avoided so that the NGO employee would not feel as though they were being evaluated in any way. Due to this, the interviewee sometimes dominated the nature of the ‘meeting’ by leading the discussion and talking continuously without letting the researcher interject at certain key moments. The researcher had partially anticipated this challenge and navigated it by showing spontaneity while obtaining data in the field by following wherever the fieldwork led. Secondly, while the NGOs were mostly generous in sharing their documents and reports, certain kinds of information such as online newsletters and internal organizational memos were inaccessible, which may have provided additional insight into this study. Thirdly, it was not possible to gain access to organizational meetings or events that might have provided greater insights for understanding learning practices through use of participant observations.

These barriers were overcome by reassessing the role of different data sources in order to use the interviews and documents to augment each other instead of treating them as entirely separate units during analysis. Hence while the primary purpose of the interviews was to explore the mechanisms of learning, they also provided insights for understanding learning shifts over time. Similarly, while the documents were primarily studied for understanding learning over time using discourse analysis, they were simultaneously used to enrich the discussion of the learning mechanisms and range of learning practices.

One final challenge that came from the use of a gatekeeper was that of unpredictability. The researcher was not entirely aware of what the interviewing schedule would look like until a few days in advance. For instance, an interview with a donor organization was added into the schedule although it had not been a part of the earlier discussion between the gatekeeper and the researcher. In that case, the researcher had to be somewhat spontaneous in planning for the meetings.

### **3.2.3 Positionality**

During qualitative research, the researcher is the instrument of data collection and hence must be mindful of her positionality i.e. the inherent socio-cultural context that she brings into the research process. This may affect her interpretation in two ways: her interpretations of the subjects, and the subsequent meaning-making process that the subjects engage in alongside the researcher (Bourke 2014).

In this study, the researcher was well-aware of her positionality as a young, female Hindi-speaking Indian student researcher who could be perceived as an elitist outsider representing an American university while conducting the fieldwork. There was a duality in positionality here as she detected a constant push and pull between feeling like an insider and an outsider: on the one hand, young Indian women are not always treated with respect during professional interactions, on the other, people seen as ‘coming back from abroad’ or ‘representing an American institution’ are often afforded deferential behavior.

As a result, depending on the situation, the researcher had to slide into different roles. For instance, in the New Delhi offices where the atmosphere was often more cosmopolitan (?), the researcher did not feel disadvantaged while conducting the interviews. However,

in the local offices of Development Alternatives in Orchha and Datia, the push and pull was more noticeable as she was sometimes seen as an ‘outsider’ coming in from an American institute, and at other times unnoticed due to her positionality as a young Indian woman.

Language is another important facet of positionality that the researcher encountered during the fieldwork. Being familiar with the local context and language proved valuable, especially in the local offices of Orchha and Datia where most of the semi-structured interviews were conducted in Hindi. On the other hand, there is vast regional diversity in India and the researcher was not well-versed with the nuances of the Bundeli dialect of Hindi that is spoken in those local field offices. While this did not hinder the interviews in any major ways, it was particularly challenging to understand local contexts in certain situations.

Language also played an important role during the transcription of the qualitative interviews. The researcher translated all the interviews from Hindi to English before beginning the qualitative coding process, and care had to be taken to preserve the essence of what the interviewees were saying.

### **3.3 Semi-Structured Qualitative Interviews**

For the semi-structured qualitative interviews, the interview protocol was developed beforehand. The questions were deliberately kept partially open-ended in order to accommodate the unpredictability of gatekeeper-negotiated fieldwork, and to give the interviewee the option to steer the conversation in the direction they saw fit within the larger purposes of this research study. Some questions were tailored to fit the specific

contexts of each individual NGO, based on a preliminary overview of information available from the websites of each of the four NGOs. After the interviews, the contact persons were requested for access to supplementary documents such as annual reports, research papers and monitoring and evaluation reports pertaining to climate change adaptation.

The following table maps the overarching themes of the interview protocol on to the larger research questions of the study in order to demonstrate how specific interview questions fit within the overall context of the study:

**TABLE 3: LINKS BETWEEN RESEARCH QUESTIONS AND INTERVIEW PROTOCOL**

<b>Research Questions</b>	<b>Corresponding Broad Questions in Interview Protocol</b>
How does learning occur over time?	“Can you provide a brief outline of your NGOs involvement in climate change adaptation: the kind of work you do, what pushed you in this direction, and how your NGO deals with the developmental challenges emerging from climate change?”
What are the learning practices that the NGOs engage in?	<ol style="list-style-type: none"> <li>1) “What kinds of strategies and tools do you use for interacting with local communities about climate change? How do you understand local situations and design solutions that meet their needs? Do you think your strategies have changed over time and how?”</li> <li>2) “How do you collaborate/coordinate with government institutions and policy makers? What are the best practices and challenges of this work?”</li> <li>3) “What strategies do you use for sharing information internally (within your organization)? This may include information you obtain from communities, other NGOs, policy-makers, your national and international networks?”</li> <li>4) “What kinds of research does your organization conduct in the context of climate change and why? What are your general conclusions from this research?”</li> <li>5) “What kinds of relationships do you share with your donors? What kind of monitoring and evaluation do you conduct and is there anything you learn from this process?”</li> </ol>
How do individuals within these NGOs learn?	<ol style="list-style-type: none"> <li>1) “What kinds of trainings do your employees undergo to deal with the emerging challenges of climate change adaptation?”</li> <li>2) “What are your specific duties, roles and responsibilities within the organization, especially in the context of climate change adaptation?”</li> </ol>
What is the role of networks and partnerships in learning?	<ol style="list-style-type: none"> <li>1) Questions about the NGOs’ specific networks and partnerships e.g. “What does the Asian Cities Climate Change Resilience Network do and what role does your organization play within the network? What have you learnt?” (question for GEAG)</li> <li>2) Questions about specific virtual platforms e.g. “What is the Bundelkhand Knowledge Platform that you have founded? Who are the actors that interact within this network?” (question for DA)</li> <li>3) How do you use social media to communicate about climate change adaptation?</li> </ol>

The interviews were digitally recorded with the verbal consent of the interviewees, and later transcribed. The following table lists the total interviews that were conducted for each of the specific NGOs:

**TABLE 4: INTERVIEWS**

<b>Interviews</b>	<b>DA</b>	<b>GEAG</b>	<b>ICSD</b>	<b>PA</b>
Overview Interview	2	1	1	1
Interviews in Local Offices	6	0	0	0
Interview with International Office	-	-	-	1

In addition to these, one interview was held with an employee of the donor organization for the federal administration of Switzerland, Swiss Agency for Development and Cooperation. The interview provided a donor’s perspective on the challenges of climate change adaptation facing the development NGOs, which was particularly useful in understanding the benefits and drawbacks of the learning from assessments mechanism.

The interviews were primarily analyzed through qualitative coding using MAXQDA software between August-November 2016. A combination of two coding methods were employed for coding the interviews: provisional coding and descriptive coding (Saldana 2009).

According to (Saldana 2009), provisional coding is when a list of codes for analyzing the qualitative data are developed prior to the analysis. For this study, the initial categories of organizational learning mechanisms were derived from the literature review, and then used to guide the provisional coding.

Simultaneously, descriptive coding was also used to identify emerging concepts of learning directly from the interviews. Descriptive coding is useful for simply asking ‘what is going on here?’ while coding in order to create the basic vocabulary for a study (Saldana 2009). Hence it was relevant to this study and allowed concepts such as that of shifts in learning over time to emerge directly from the interviews.

Based on qualitative coding done using the above two methods, a picture of learning mechanisms and barriers to learning for climate change adaptation emerged for these four NGOs. Revelations and reflections were recorded using memos throughout the coding process.

### **3.4 Discourse Analysis**

Discourse analysis was used to delineate how NGOs talk about climate change adaptation and what kinds of changes this discourse has undergone over time. The changes are understood to be indicative of organizational learning that is internalized by NGOs either explicitly or implicitly. This part of the case study was directed towards attempting to answer the research question: How does learning for climate change adaptation within these NGOs occur over time?

For the discourse analysis, all the transcribed interviews and documents utilized were either obtained from the contact persons in the NGOs or from the NGO websites whenever available. The documents served two purposes: augmenting the interviews for discussions around NGO learning mechanisms, and serving as the primary data for discourse analysis to capture learning over time. Appendix A at the end of this thesis enlists all the interviews and documents that were used for this study, and assigns them

alphanumeric codes that have been used while referencing to a particular interview, document or blog throughout this thesis. For instance, A is the letter assigned to documents from Development Alternatives. The Roman numerals I, II, III etc. refer to the interviews, the numbers 1,2,3 etc. stand for documents, and i, ii, iii for specific blog posts. Hence A.1 indicates the first document listed for DA in the appendix.

While discourse analysis may refer to several methods that are used to analyze discourse in various texts, the discourse analysis utilized in this study derives from a Foucauldian tradition that traces how knowledge about a particular discipline or topic is defined through discourse (Morgan 2010; Hajer 1997). Escobar (1992) argues that discourse can be powerful because they open up possibilities for rethinking reality. In this case, in shifting towards climate change adaptation, development NGOs have created their own language for climate change adaptation that mirrors the implementation they pursue on the ground. In doing so, NGOs can merely be restating old practices in order to stay relevant, or truly be pursuing a new opportunity (Ireland 2012)

The discourse analysis in this study was undertaken through between December-February 2016. The process was carried out in the following steps:

- 1) **Determination of storylines:** Storylines are defined by Hajer (2006) as ‘condense statements summarizing complex narratives, used by people as “short hand” in discussions’. Storylines may be rigid or flexible in terms of the number and types of concepts that are included within them. The same storyline may often convey multiple meanings which coexist simultaneously (Hajer 2006). NGOs may therefore define and utilize the same storyline in multiple different ways, and may

shift their narratives over time. The shifting storylines over time are indicative of learning having occurred.

- 2) **Bounding the storylines:** The semi-structured interviews were used to define the characteristics of each storyline based on how the NGO employees were talking about them. In some cases there was strong resonance between NGO discussions about storyline and the characteristics in the literature. In other situations there was less overlap. In situations of conflict the characteristics of each storyline as identified by NGO participants were used. Once the boundaries of each storyline was determined, they could be used to develop a rating system for mapping shifts occurring over time.
- 3) **Mapping shifts over time:** The storylines were used to map how NGO discourse was shifting over time. In order to do this, each storyline was assigned a rating for each year in every NGO, based on how the available NGO documents talked about a storyline.

The following sub-sections discuss this process in more detail:

### **3.4.1 Storylines**

For the discourse analysis in this study, the first step was the determination of the storylines. The qualitative interviews were used to understand the different kinds of storylines that came up most frequently during the conversations with NGO employees, and whether they occurred across multiple NGO. Insights from the literature were integrated with those from the interviews to enrich the storylines.



The following table lists the primary concepts that emerged during interviews. Concepts were bundled into storylines, which are basically cohesive, internally logical ways of understanding a situation in terms of what kinds of a problem or situation is occurring, and what are the implied strategies to address it. Not all concepts fit within coherent storylines, and these ones were excluded from the discourse analysis.

**TABLE 5: LIST OF CONSIDERED STORYLINES**

<b>S. NO.</b>	<b>CONSIDERED CONCEPTS</b>	<b>INTERVIEWS</b>
1	Capacity Building/ Building Capacity/ Capacity Development	DA, GEAG, ICSD, PA
2	Knowledge Support/Management System/MIS	DA, GEAG, ICSD, PA
3	Natural Resource Management/ Land/Soil/Water Management	DA, GEAG, ICSD
4	Risk Assessment/ Disaster Risk Reduction	DA, ICSD, PA
5	Climate Resilient Agriculture	GEAG, ICSD, PA
6	Vulnerability	DA, ICSD
7	Resilience	DA, GEAG
8	Institution Building/Community Institutions	DA, GEAG
9	Adaptive Capacity	DA, PA
10	Knowledge Sharing/Information System	DA, ICSD
11	Traditional/Local Knowledge	DA, GEAG
12	Climate Smart Agriculture	ICSD, PA
13	Drought Mitigation	DA
14	Government Planning	DA
15	Action Research	DA
16	Climate Change Communication	DA
17	Participatory Methodologies/ PRA	GEAG
18	Research-Based Advocacy	GEAG
19	Networking	GEAG
20	Participatory Technology Development	ICSD
21	Training Needs Assessment for Climate Change	ICSD
22	Sustainable Agriculture	PA
23	Communities of Practice (for learning)	PA
24	Agro-Ecological Approaches	PA

Some of the above concepts folded into one another to give rise to a unified storyline. For instance, the interviewees often referred to similar problems and solutions when talking about both, Climate Resilient Agriculture and Climate Smart Agriculture. These two concepts could hence be safely merged into one another to give rise to a single, overarching storyline about Climate Smart Agriculture. Certain other concepts that did not occur across multiple NGOs were discarded, although components of these concepts were captured under specific storylines. For instance, GEAG was the only NGO that mentioned the concept of ‘research-based advocacy’, but most of the activities they undertake within that storyline, such as hosting conferences for sharing lessons, or making policy recommendations to governments, could be folded into the Capacity Building storyline.

While the realm of topics covered under climate change adaptation is vast, in the development space of these 4 NGOs, these topics can be largely captured under six storylines that NGOs refer to in documentation and speech when asked about adaptation: Capacity Building, Climate Smart Agriculture, Disaster Risk Reduction, Natural Resource Management, Resilience, and Vulnerability. Each of these storylines are explored in detail below:

#### ***3.4.1.1 Capacity Building***

The capacity building storyline is broad and is largely invoked by these NGOs when they are focusing on the enhancement of the adaptive capacity of vulnerable communities that are facing increasing climate risks. Additionally, NGOs also use capacity building to talk about the support they often provide to government departments at various levels.

Finally, this storyline is also understood to denote the advocacy, knowledge sharing, and awareness building activities that NGOs undertake with the various stakeholders that they interact with.

At the heart of the capacity building storyline, NGOs are looking to build long term social and human capital of vulnerable communities since they know that they are not going to stay in the field forever, and need to make the communities self-sufficient (B.I). Hence the strongest capacity building narratives often focus on creating new or strengthening existing community institutions that can enable social cohesion within community members, develop collective problem-solving skills, build communication channels for scientific and technical information to reach communities in simplified forms, and provide the technological and biophysical resources needed to protect livelihoods and improve quality of life against increasing climate risks (A.I, B.I, C.I).

Beyond communities, the capacity building storyline is also focused on providing support to other stakeholders that NGOs work with. In their interactions with government departments at the local and state levels, NGOs may sometimes provide consultations on how to mainstream climate change adaptation into existing policies and projects (C.I, D.I). Seen as experts on the issues facing grassroots communities, their support is always sought, even if it is not always integrated (A.I). This support may range from providing expertise about local/regional issues and providing feedback about policies, to compiling specific reports and policy briefs.

Another important component of capacity building undertaken by these NGOs is fostering of networks and partnerships for sharing best practices and lessons learnt,

research and reports through digital knowledge sharing platforms, workshops, trainings and/or conferences with stakeholders such as other NGOs, CSOs, research institutions, and experts from around the world.

Finally, advocacy and awareness building can be seen as another component of NGOs' capacity building. They use media campaigns and publications to disseminate relevant information on climate change for specific target audiences such as villagers or school children. NGOs also engage in advocacy for bringing attention to socially and/or economically marginalized communities. For instance, GEAG has chosen to support

#### ***3.4.1.2 Climate Smart Agriculture/ Climate Resilient Agriculture***

In working extensively with rural communities that are often highly dependent on agriculture, all 4 NGOs use the climate resilient agriculture or climate smart agriculture storyline (used interchangeably here) to navigate the added challenges that climate change brings for the agricultural sector. According to the Food and Agriculture Organization of the United Nations, Climate Smart Agriculture is an adaptation strategy to help countries increase agricultural productivity and incomes, build resilience and capacity against climate change and mitigate GHG emissions (Asfaw and Lipper 2016).

At the core of this storyline lie sustainable agricultural practices that utilize ecosystem and land/water management and build upon solutions that are innovative in resource and energy use (Asfaw and Lipper 2016). The NGOs also encourage diversification in order to supplement agriculture with other livelihoods. Another important component of this storyline is the idea that solutions should be contextual and site-specific, based on diverse socioeconomic and environmental contexts (Asfaw and Lipper 2016). Hence the

solutions have to be localized (A.I) because climate impacts may differ greatly between places.

NGOs also focus on introducing innovative financial mechanisms along with policy instruments that can relieve economic stresses for farmers and provide ease of access to markets (Asfaw and Lipper 2016). Strategies could include value chain assessment, price negotiations and provision of compensation through pricing mechanisms.

Attention is also paid to institutional and governance shifts in order to align local and state governments with goals of long-term climate resilience, and create appropriate institutional mechanisms that can facilitate inclusive dialogue and information dissemination, particularly for marginalized members such as women farmers (Asfaw and Lipper 2016). Creating linkages between communities and research institutions, other CSOs and NGOs can also be integral for NGOs when engaging in this storyline, often because new and unforeseen situations that may arise due to climate change may be supported by well-connected institutions.

#### ***3.4.1.3 Disaster Risk Reduction***

In the short term, the Disaster Risk Reduction storyline focuses only on providing immediate material relief in the aftermath of natural disasters such as droughts, famines, floods or Tsunamis. When DRR is hazards-focused, there can be an additional component of disaster preparedness through contingency plans and institutions such as Disaster Risk Reduction committees that were formed in certain blocks of Gorakhpur during a project undertaken by GEAG in 2010-11 (B.1). When NGOs engage more deeply with the DRR narrative, they recognize climate change as a threat that may lead to

increased frequency, intensity and unpredictability of natural disasters. In that case, NGOs may begin to favor the creation of networks as a strategy for dissemination of important information.

In the long-term, NGOs may work alongside local, state and national governments to integrate DRR concerns within sectors such as agriculture, water, urban development and housing etc. This may include, for instance, what DA calls climate-responsive construction in small towns and villages, or ‘policy-support tools and capacity building modules on low carbon construction’ (A.7). NGOs may also focus on introducing technological innovations that can combat the impact of disasters on livelihoods and quality of life, such as Information and Communication Technology in the form of SMS alerts or early warning systems (D.i).

In the long term, NGOs may commit to enriching the DRR storyline by combining it with other storylines, such as vulnerability or resilience. In doing so, NGOs may also create multi-pronged, multi-dimensional approaches to ensure a union between conversations on issues like sustainable livelihoods, disaster management and climate change adaptation (D.11).

#### ***3.4.1.4 Natural Resource Management***

The NRM narrative focuses on protecting natural resources and managing the relationship between people and nature, along with a climate lens for long-term sustenance and conservation based on expected future climatic trends. NRM can be linked to one or more of the following services: agriculture, water and sanitation, land use and forestry, and biodiversity and livestock. The formation of farmer groups for ‘efficient

irrigation and agro-forestry’, for instance, is a combination of NRM with sustainable agriculture (A.5). As the NRM narrative starts to deepen, NGOs may conduct research to develop solutions that integrate climatic trend, using tools such as GIS-mapping of the ‘economic and cultural domain’ of communities to assist with the development of solutions that integrate expected climatic and resource trends for future planning (A.6).

In addition, NGOs can also engage in capacity building around NRM that can either be institutional (building community institutions or aligning governance institutions), social (social learning and information dissemination in communities) or technical (knowledge and skills required to sustain NRM) in nature, such as linkages with state departments for small and marginal farmers to get access to relevant agricultural information and support (B.6)

#### ***3.4.1.5 Resilience***

The resilience narrative is very flexible and fluid in nature, invoked by NGOs in many different ways. When NGOs talk about ‘building resilience’, they may refer to building the ability of vulnerable communities to ‘resist, absorb, cope with and recover from’ the effects of climate change, with a primary focus on protecting livelihoods and quality of life of identifiable vulnerable communities, ensuring environmental sustainability by protecting natural resources, and increasing the capacity of communities to bounce back from extreme climate disasters (D.11).

Most NGOs initially begin engaging in concepts of resilience by conducting different forms of vulnerability assessments to understand and monitor the baseline situation. Following this, NGOs may engage in awareness and rapport-building activities such as

workshops for rapport-building with communities, based on the identified vulnerabilities (B.3).

When NGOs start embracing the resilience narrative, they often focus on social resilience which aims to connect institutions and communities, and strengthen their cohesion and communication in order to create shared learning practices that put livelihoods, natural resources and/or disaster preparedness at the center of focus. For instance, this effort could involve building on ‘common themes of a shared vision, collaboration, accountability and engagement’ for resilience to floods (D.iv).

Resilience is also believed to be strengthened when livelihoods, quality of life and natural resources are protected through new methods for agriculture (a primary source of income for many vulnerable communities) and other livelihoods, technological innovation and diversification. NGOs may also focus on enhancing community access to useful scientific and technical knowledge, and validating traditional knowledge (AII).

Enriched resilience narratives focus on creating links between different scales of operation within communities, government departments and policy makers, and other experts in research institutions, CSOs and the market. There is often an element of learning and sharing involved here, and an underlying conceptual understanding of resilience may be promoted. For instance, GEAG relies on a Climate Resilience Framework that includes processes for ‘understanding vulnerability’ and ‘building resilience’ through a component of shared learning (B.6)



#### **3.4.1.6 Vulnerability**

At the heart of the vulnerability storyline utilized by NGOs is the idea that individuals and communities may be highly susceptible to certain kinds of harm that need to be identified in order to protect them. In its preliminary stages, NGOs may focus on outcome vulnerability which considers what the ‘linear result of the projected impacts of climate change on a particular (social or biophysical) exposure’ may be. NGOs engage in studies with a sectoral focus, and solutions are geared at reducing sectoral sensitivities, technical adoptions and quantifiable measures (O’Brien et al., 2007). ICSD’s vulnerability profiles to natural disasters for South Asia are an example of this, as they considered specific vulnerabilities of the agricultural sector to disasters such as floods, droughts and cyclones (C.2)

A deepened vulnerability storyline moves towards contextual vulnerability which places harm from climate impacts at the center of other socio-political and economic structures, and asks which groups are more impacted and why. In this case, institutional and socio-economic constraints are addressed in order to reduce inequities and address local constraints through capacity building, adaptive management, focus on livelihoods and coping strategies, and enhanced social capital (O’Brien et al., 2007). In the long term, NGOs engaging in the vulnerability narrative may look for alternative development pathways that promote multi-sectoral planning and address power structures.

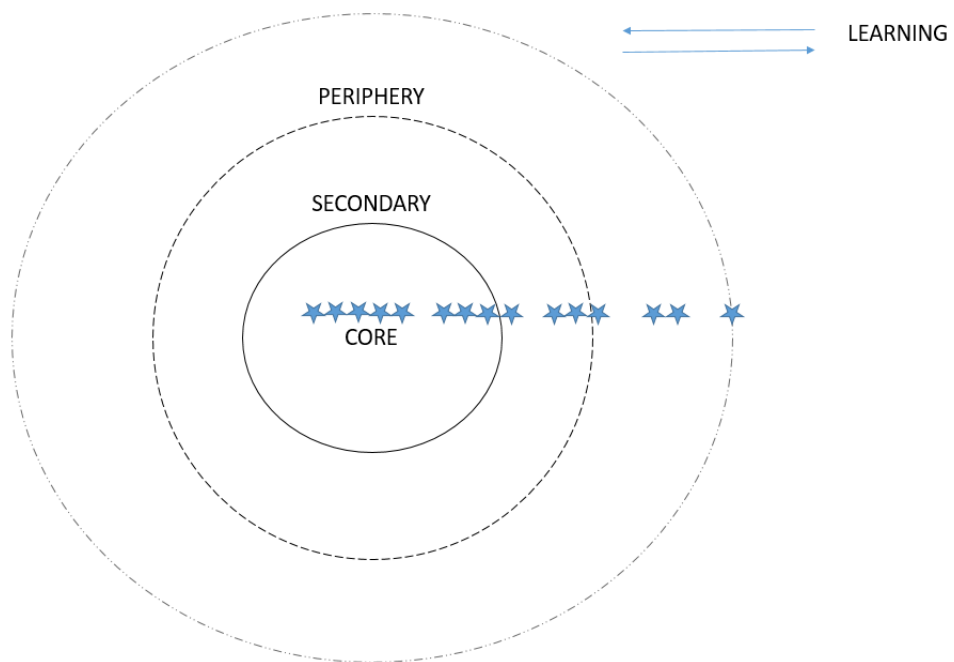
#### **3.4.2 Anchors**

For each of the above storylines, ‘anchors’ were used to determine their scope and limits. Anchors are defined here as characterizing features or activities that give meaning and

definition to the storylines, grounding the storyline on the basis of literature and/or concepts raised in the qualitative interviews. In order to identify anchors for this study, the interviews were broadly re-coded using a combination of descriptive and provisional coding. The list of codes for the descriptive coding were derived from relevant literature. Hence the anchors emerged from a combination of insights from the interviews and the literature. For this coding, the intention was to discover the specific ways in which NGO employees were talking about the storylines that had been identified. This coding was hence not as nuanced as the first cycle of coding which was used to identify learning practices.

Three kinds of anchors have been identified for determining how deeply an NGO is engaged with a particular storyline: core, secondary and periphery. The specific characteristics of these different anchors depended on a combination of what the literature and the interviews suggested as important. For instance, for the Climate Smart Agriculture storyline, FAO suggests NRM-based, contextually grounded practices, supplemented with institution-building and the use of appropriate financial mechanisms. The interviews indicated that NRM and contextually were both valued more frequently when talking about sustainable agriculture. Hence they became the core anchors for this particular storyline. For any NGO, a specific storyline can exist as long as one or more of the periphery anchors are present. The presence of secondary and core anchors further define the storyline's depth, thereby demonstrating *how* enriched an NGOs adoption of a particular storyline is.

In order to understand the shifts in learning over time, the documents were arranged in chronological order according to year. The anchors were used to assign stars to each year based on how deeply or peripherally an NGO engaged with a particular storyline in a given year. For instance, if Development Alternatives engaged with core, secondary and periphery anchors in 2010, they received 4-5 stars according to the diagram below, which maps out the anchors for each storyline:



**FIGURE 2: DIAGRAM MAPPING THE STARS ASSIGNED TO CORE, SECONDARY, AND PERIPHERY ANCHORS**

Furthermore, a number of additional criteria were identified to further clarify the assignment of stars:

- 1) **Use of the climate lens:** Do the storylines have a ‘climate lens’? In other words, are they concerned about future climatic trends, engaging with scientific, technical and social research/knowledge on climate change? A storyline may still be assigned 1 star in a particular year if an NGO is engaging deeply with the anchors, even if climate change is not explicitly acknowledged. However, for higher stars a storyline should necessarily have a stronger climate-focus.
- 2) **Repackaging of old projects:** Is there any conceptual or strategic addition to the previous year or is it just a ‘repackaging’ of old concepts? Number of stars between years could remain the same or be reduced by one if practices are not significantly enhanced.
- 3) **Scaling:** If an innovative project is conducted on a small/pilot scale, it will still qualify for an additional star if it meets a sufficient number of anchors. Scaling up may qualify for additional stars depending on depth of reflection undertaken for scaling up.
- 4) **Importance given in reports:** Sometimes annual reports may not mention a project/strategy in-depth. In that case, available augmenting documents are used to further enrich understanding. Additional stars may still be assigned to a year if appropriate anchors are identified in augmenting documents.

A table summarizing the core, secondary, and periphery anchors for each of the storylines that was used to guide the assignment of stars to each year can be found in Appendix B.

### **3.5 Conclusion**

This chapter justifies the use of the exploratory multiple-case study design used for this thesis. It further discusses the process of designing this research study including fieldwork and its challenges, semi-structured interviews and their coding, and discourse analysis used to address the research objectives and research questions.

The subsequent chapters explore the learning mechanisms and learning over time using the methodologies described here.

## Chapter Four

### Learning Mechanisms for Climate Change Adaptation

As a learning organization, NGOs utilize a combination of learning mechanisms such as direct learning, indirect learning or learning through interaction, learning from assessment and learning over time and through the organizational memory. Through these mechanisms knowledge is absorbed, stored, retrieved, reflected upon and utilized by the NGO in their day-to-day functioning. An NGO is constantly learning through different agents such as individuals, groups, networks and partner organizations. However, as seen earlier in this thesis, given the amorphous and dynamic nature of climate change adaptation within the development space, it may be useful to understand whether and how learning mechanisms within NGOs have morphed to accommodate these changes, and what kinds of barriers remain in their quest to do so.

This chapter mainly addresses the research objective of understanding learning mechanisms for climate change adaptation utilized within the 4 NGOs. These learning mechanisms are dependent upon the agents that enable learning within the NGO- individuals, networks and partnerships. Understanding their roles within learning mechanisms is pertinent to understand learning in the NGO as a whole.

Additionally, this chapter also explores a process parallel to learning that emerged from the research study - that of teaching. For development NGOs, teaching others, especially grassroots communities, is often a part of their mandate towards reducing risks for vulnerable populations. NGO employees are often driven by a stronger sense of purpose and urgency towards teaching, than they are for learning, which may even be undertaken

unconsciously. A discussion about the physical or virtual teaching-learning spaces provide a sense of the kinds of environment in which NGOs function, and how these might be conducive towards the process of learning. This discussion is included towards the end of this chapter.

#### **4.1 Direct Learning**

Direct learning or learning ‘on the ground’ is the most fundamental form of learning that NGOs engage in through individual employees. NGO employees often see direct learning as an essential and primary component of both, their initial training and their continual work with communities (A.I, A.III, B.I, C.I, D.II). As individuals pursue direct learning, they may also experience a push-pull between exploitation of existing strategies and exploration of new strategies. This is a concern they are seen to constantly be addressing in their work, whether consciously or unconsciously.

For climate change adaptation, most NGOs realize that there are knowledge gaps in their understanding of vulnerability to climate risks that their communities face. All four NGOs have begun to fill these knowledge gaps through vulnerability assessments for a geographical region, or different forms of baseline surveys for towns and villages (A.15, B.7, C.3, D.11). NGOs may use a variety of pre-existing ‘quantitative and qualitative methods for data and information collection’ that are already at their disposal in the development sector, pertaining to demographics, ‘level of risk factors’, and ‘impacts of risk’ on communities affected by climatic variations (A.III, B.7). This is also used as a means for individual NGO employees to learn about local issues and build relationships in communities. As one employee from Development Alternatives pointed out, when she

first came to the Bundelkhand region from Shimla, she realized that the ‘climatic conditions’ in both places were ‘totally different’ and so were the ‘community development issues’ that needed to be addressed to reduce vulnerability to climate impacts. In order to understand the ‘barriers in attitudinal change for people’, she had to learn through field visits and interactions, often designing her own surveys that could fill knowledge gaps that the organization had yet to find information on (A.III).

In addition to exploiting their tested methods for data collection on the field, NGOs have also begun exploring new forms of communication in their teaching-learning spaces that are discussed in more detail later in this chapter. NGOs may utilize these new forms of communication in the hope that they will enable the collaborative and iteratively reflective environment that communities might need going forward. For instance, when GEAG started a project on urban climate change resilience in the city of Gorakhpur in 2011, they aimed to build long-term interactions between stakeholders. They explored a new method called Shared Learning Dialogues which are ‘iterative, transparent group discussions with local community actors, government agencies, and specific organizations’ in order to identify ‘constraints and opportunities in adapting to climate change’ and understand the ‘complex systems within the Gorakhpur City’ (B.7).

Similarly, in their project on setting up Farmers Adaptation Clusters in Bundelkhand, DA used ‘knowledge dialogues’ for ‘groups of farmers to’ exchange information with ‘local facilitating bodies’ and ultimately ‘influence policy frameworks at state, regional and national levels that would favor the large scale replication of ‘low carbon economic growth’ for vulnerable communities’ (A.12). In both cases, these were methods that the



NGOs had not tried before but realized would be useful in building an initial rapport while gaining the confidence of the community for the duration of their project. Moreover, these practices were seen as useful for enabling long-term connections between grassroots institutions and external experts or policy makers that may empower communities and give them a voice in decision-making pertinent to the emerging challenges of climate change even after the NGO had left (B.I, C.I).

The NGOs themselves learn valuable lessons from these initial exercises. For instance, through their urban climate change resilience project, GEAG learned that social cohesion does not work in urban areas the way it does in rural regions based on their experiences where ‘people never used to come for meetings’ other than ‘one or two households’ (B.I). DA faced a different roadblock in communication when they realized that since the communities they were working with were often ‘traditional, conservative and not amenable to change’, they needed to make climate change more easily ‘absorbable...by the people’ (A.I). Similarly, PA’s first-hand understanding of the interrelations between ‘poverty, vulnerability and disasters’ for those on the ground led the organization to design a capacity-building project in the Gwanda district of Zimbabwe to enable community identification of hazards such as droughts (D.11)

In all the examples mentioned above, NGOs used the direct learning mechanism in the initial stages of their interaction with communities in order to inform their implementation. In the implementation stage, NGOs rely on a variety of techniques to build local capacities, provide resources, enable more informed decision-making, and allow the voices of vulnerable communities to be heard. These include institutional

building activities, skills-building trainings and workshops, NGOs may continue using the communication spaces they started developing during their initial assessments for communication, create new spaces or exploit spaces that may pre-exist as part of an older project.

The use of Information and Communication Technology (ICT) is one such communication tool something that all NGOs have taken up in different forms, especially as they shift their work towards climate change. For instance, DA employees have ‘started looking more closely at the MET information and studying that information’ while ‘connecting people with’ it on a daily basis (A.I). Other NGOs have also learned to use innovative ICT tools such as SMS services that bring weather advisories directly to farmers’ mobile phones in Hindi. GEAG also realized that government-provided climate data may not always be useful to farmers, and so the organization stepped in to fill the knowledge gap by hiring a ‘climatologist in-house who does the downscaling of climate data’ to the district level so that farmers can understand it better (B.I). Similarly, PA uses weather boards in Nepal to inform farmers about upcoming weather conditions, often enabling them to save their harvests (B.I, D.xii).

NGOs may also find other, previously-unexplored uses for ICT. The case of DA’s community radio in Bundelkhand best exemplifies this. DA learned through their baseline surveys that as the second most common source of entertainment for the communities in Bundelkhand, radio was a medium that they could use to their advantage. DA began using it as a virtual platform for climate change communication. The organization began thinking long-term about how the radio could be ‘used to fill the gap

between policy, research and community’, and set up and trained a team that would create radio programs in-house to cater to community needs (A.I, A.II). A DA employee who has been working with the radio for around 10 years since its inception noted that they had designed a number of shows in the local ‘Bundeli bhasha’ (Bundeli language) that included folk songs, stories and enactments that could entertain and inform at the same time. These programs allow locals to call in and express their thoughts and opinions, give feedback on the show and ask for specific information The show even encourages discussion on perceptions in addition to providing information, with callers comparing climate change to ‘God’s doing’ or a result of cutting trees and cutting ‘into the mountains’( A.II). Besides teaching communities, the two-way interaction that occurs on this platform is useful for the NGO employees to improve their own communication strategies for the radio show.

Direct learning also occurs in the more technical aspects of the NGO’s work. In their work in the fields, NGO employees may correlate the information they find on the ground with what ‘science says’ and integrate it into their data (A.IV, C.I). In looking through a ‘climate lens’ for NRM, for instance DA focuses on ‘agro-services and agro-environment’ so that the ‘level of natural resource can be maintained for a long term’ in light of the expected climatic trends for the future. The NGO uses community participation to encourage farmers to ‘volunteer to take a small piece of land’ for experimenting with different methods for better NRM (A.IV). Often the NGO facilitates such pilots between farmers and external experts such as research institutions. For instance, in their work with paddy farmers in Uttarakhand, ICSD employees enabled

some farmers to conduct small experimental pilot projects on a patch of their land, in collaboration with a local university (C.I) One employee from DA also used this technique to study the soil in Bundelkhand region and learned about a suitable variety of groundnut which was ‘good for the region’ and had a high ‘market demand’. Along with the use of water harvesting structures and cropping techniques, this allows farmers to fight the erratic climatic conditions in the region. According to him, focusing on the soil and seeds instead of obsessing over climatic trends was more beneficial because ultimately ‘you are getting the internal strength to fight the climate’ through it (A.IV).

Additionally, NGOs often tap into pre-existing institutions, exploiting them as spaces to enhance resilience to climate change. For instance, GEAG had been working in sustainable agriculture for years before they shifted into adaptation. Their Farmer Field School (FFS) is a ‘platform where farmers could share experience’ and facilitate ‘experimentation, dialogue and shared decision-making’. In expanding their work into climate resilience for urban and peri-urban regions, the NGO has learned that they can use FFS and other pre-existing institutions to provide trainings and workshops to farmers for floor protection. (B.11)

Finally, NGOs also depend on media campaigns to provide information and raise awareness among a much broader public or a specific target audience. DA used a competition called Shubhkal to get farmers to share agricultural strategies for fighting climate change (A.II). In this process, DA itself learned from farmers about traditional farming methods, such as use of an organic fertilizer ‘amrit mitti’ (A.II).

In summary, NGOs utilize direct learning mechanisms through a number of different practices. This form of learning is largely undertaken by individual employees, who then add to the wealth of the organization's knowledge, sharing information, building new strategies or finding ways to reuse old strategies. Even as they are learning on the ground, NGOs also focus on teaching communities. This interaction occurs in teaching-learning spaces which are discussed in more detail later, and can give rise to bonds between individual NGO employees and community members. This may often make the employees feel personally responsible for protecting vulnerable communities. As one employee from ICSD pointed out, NGOs have to be 'careful about certain ethical aspects' as they are often 'experimenting with livelihoods'. In direct learning for climate change adaptation, NGO employees may need to be constantly weary of the dangers of maladaptation (E), which can have very real consequences for the communities they work with. This sense of urgency may often drive NGOs to be more effective teachers, but has the danger of sidelining their learning. This is evident in the conversations with NGO employees during the course of this research, where they found it easy to reflect on the benefits of their teaching, but often had a harder time talking about how they were learning on the ground. More research is needed to understand how this may impact NGO effectiveness for climate change adaptation.

#### **4.2 Indirect Learning**

In addition to the direct learning that NGOs undertake while working with communities on the ground, NGO employees also learn indirectly from others the organization, and from stakeholders outside the NGO who may be embedded in similar contexts, may be

employing similar approaches, or may bring a radically different outlook that could benefit the NGO in their own work. Within the organization, indirect learning takes place through sharing and diffusion of individual and group experiences through either formal or informal channels. An organization's culture may often be conducive in determining how easily knowledge and information is shared within the NGO. Factors such as the geographical spread of the NGO, and the nature of the projects undertaken may also contribute towards indirect learning within the organization. Additionally, NGO employees also learn constantly from partner organizations and networks outside their organization. This sub-section discusses the indirect learning mechanism for the 4 NGOs.

The formal indirect learning practices that NGOs employ may depend on the kind of communication that is encouraged by the organizational culture. For instance, employees from DA and GEAG both explained that their organization has an 'almost flat' or non-hierarchical structure when it comes to communication, which means that employees are 'never told what to do and how', and instead allowed to be 'flexible', 'transparent' and 'open' in sharing with each other (A.III, B.I).

For a large NGO like DA, the formal indirect learning practices are not always specific to climate change but have emerged over the course of the NGO's existence and implementation in diverse and complex sectors such as NRM or social entrepreneurship. These ingrained mechanisms do not seem to have undergone any drastic shifts specifically in light of the NGO's involvement in climate change adaptation. At their head office in New Delhi, DA follows a programmatic mode where each program that they undertake has objectives along the 'triple bottom line of environmental, social and

economic aspects' (A.I). The organization assigns 'certain dedicated teams' on a 'quarterly basis' in order to 'understand learning...where the organization needs to go, opportunities that are emerging etc.' (A.I). Such reflections, for instance may have resulted in DA's 'dynamic new corporate strategy' in 2008, which was 'to be in resonance with social, environment and economic imperatives' (A.3). This was also the year the NGO took up the mandate of climate change adaptation, starting with vulnerability assessments in Bundelkhand, and coordinating the activities of the CANSA network (A.3). Similarly, DA has a culture of hosting a meeting every Saturday for 'over more than 20 years' where employees either take turns presenting their work 'so everybody learns' or 'outside experts' are called in to talk about issues ranging from 'sustainable agricultural practices to energy management' (A.I, A.V). These meetings also occur in the regional office of DA, and the two offices are often 'connected through internet and voice and video' (A.I, A.V)

Smaller organizations such as ICSD and GEAG, on the other hand, may rely more heavily on informal mechanisms to share knowledge and information because they are geographically more contained. For instance, after attending a regional conference for 'the South Asia and Central Asia region' to discuss climate change adaptation experiences, one employee explained that he 'briefed others within the organization about his inputs from the conference so that other employees could 'be the contact person for the next steps' of sharing reports and carrying out lengthier discussions about strategies (C.I). Similarly, GEAG creates informal 'channels of communication' through Whatsapp

groups, and by ‘talking to each other every day’ in order to maintain a ‘participatory mode in the office’ (B.I).

On the other extreme however, due to its spread across several continents, Practical Action has had to find more creative ways to communicate, some of which have been in specific response to their engagement in climate change. One PA employee who is particularly enthusiastic about learning noted that it is important for the NGO to include ‘learning as an objective’ in order for the learning to be effective ‘at the organizational level and the individual level’, but did not think that others across the organization shared this opinion (D.I). Nonetheless, PA has created unique formal channels of communication to enable learning and sharing of knowledge.

Global Groups is one such ‘specific instrument’ that the organization uses to discuss themes such as sustainable agriculture, energy and disaster risk reduction that run common across all branches of PA (D.I). These groups consist of employees from all of Practical Action’s regional offices and country offices who ‘have one virtual meeting a month’ and meet ‘face-to-face once a year’ to discuss and reflect on their implementation strategies. Climate change used to be a specific Global Group until the organization realized that ‘it would be more useful to talk about climate change across these groups’ instead of treating it as a separate subject. Following this, PA transformed climate change into a ‘cross-cutting issue’ that affects their objective areas of DRR, energy, agriculture and water and sanitation (D.I). Additionally, the organization uses virtual tools such as LinkedIn and Yammer groups for carrying out conversations and asking other employees questions remotely (D.I). Perhaps it is due to their geographical limitations, but PA’s



organizational culture is more oriented towards sharing knowledge and learning through formal channels than those of the other NGOs in this research.

Another method of communication for individuals within an NGO is through virtual networks. Participation in such virtual spaces can be undertaken in a personal capacity, or on behalf of the NGO (D.I). For NGO employees, such networks are ‘extremely useful’ sources of individual indirect learning from the experience of others, but more importantly are also seen as opportunities to create new collaborative activities. As the table below shows, all four NGOs are involved in networks that provide opportunities for organizations to form partnerships and share lessons related to climate change adaptation and other similar issues.

**TABLE 6: NGO NETWORKS**

<b>Networks/NGOs</b>	<b>DA</b>	<b>GEAG</b>	<b>ICSD</b>	<b>PA</b>
International/ Multilateral/ Bilateral	Climate Action Network-South Asia, Climate and Development Knowledge Network, Global Resource Information Network, basin-South Asia Regional Knowledge Platform	Climate and Development Knowledge Network, Asian Cities Climate Change Resilience Network	Climate and Development Knowledge Network, Climate Proofing Growth and Development	Climate and Development Knowledge Network, Practical Answers Knowledge Point UNDP Solutions Network ELLA South-South Knowledge Exchange Programme
National/ Regional	ENVIS (Environment Information System), Bundelkhand Knowledge Platform	humaragorakhpur.com	-	-

These networks may sometimes be only virtual, whereas at other times they may occasionally meet physically, or lead to other kinds of partnerships. For instance, through the Climate and Development Knowledge Network (CDKN), Practical Action Consulting (PAC) alongside the Institute of Development Studies (IDS) undertook a global study on ‘gender approaches in climate compatible development’ (D.13). As part of this initiative, GEAG, which is also part of CDKN, wrote a report of ‘regional relevance’ to the Indian subcontinent pertaining to their experience working with women in Gorakhpur undertaking ‘climate change adaptation’ (D.13).

Moreover, NGOs are beginning to realize that they cannot singlehandedly ‘have influence...or impact’ without collaborations due to the complex nature of climate change (C.I). As NGOs understand the importance of networks and liaisons, they may occasionally make changes in their organizational structure. For instance, GEAG opened a small branch in New Delhi in 2014 since they realized that they needed an office there that could ‘coordinate the national level’ and undertake ‘international advocacy’ (B.I). The NGO uses this small and informal office space to organize and participate in workshops, ‘be on a regular touch with different partners’, and collaborate on ‘inter-learning exercises...and proposal building... with other NGOs’ (B.I).

By themselves, partnerships are one of the richest sources for NGOs to undertake indirect learning. They are important for accessing experiences and secondary data sources, learning about different methods that the NGO can later explore as part of its direct learning on its own, and for knowledge sharing in general. For instance, an employee

from DA pointed out that the Bundelkhand Knowledge Platform for getting ‘like-minded organizations’, policymakers, donors and financial institutions, and farmers to come together and share ‘common concerns’ about the ‘real time issues’ that they face is one of their most fruitful ventures in the Bundelkhand region (D.V).

Another essential space for teaching-learning through indirect learning mechanisms are conferences, which allow diverse stakeholders to learn from one another. For instance, GEAG undertook a national scale research-based advocacy workshop on peri-urban areas in 2016, inviting participants from international development agencies such as UNDP and WRI, climate networks such as CANSA, NGOs such as Action Aid, Practical Action, CSE and TERI, policymakers, local CSOs, independent experts and a range of other stakeholders (B.10). Such conferences can be vibrant spaces for exchanging knowledge and resources. In this particular case, the range of knowledge shared included ‘urban and peri-urban initiatives’ undertaken in multiple cities, results of ‘mathematical models’ and ‘remote sensing data’ on flooding, and changes in land-use patterns, capacity building exercises undertaken by GEAG that make farmers feel ‘filled with pride, conscious of both a sense of recognition and motivation’, and discussions about the ‘way forward’ to address key issues in these regions, among other issues (B.10).

Overall, the indirect learning mechanism can prove to be highly beneficial for NGOs. It provides opportunities for individuals within NGOs to learn from each other, and from others through networks and partnerships outside the NGO, and to bring that knowledge back to their organization. For climate change adaptation, these spaces are even more useful and as NGOs begin to realize this, they are willing to invest more resources into

sharing and learning from one another, and finding ways to collaborate. Larger NGOs however, have a greater need and ability to utilize tools and techniques for learning. At the end of the day, NGOs may often be constrained by limited funding and by feelings of ‘insecurity’ and competition about competing for funds rather than working collaboratively (B.I, C.I). At the same time, NGOs are often aware that ‘partnership and collaboration is the major issue to be addressed in this field’ as ‘no NGO can do it all alone... especially in climate change’ (C.I).

### **4.3 Learning from Assessment**

NGOs carry out Monitoring and Evaluation activities as a routine part of their project management cycles (D.I). All four NGOs studied in this thesis see M&E as a ‘very delivery-based’ system for donors who proactively seek feedback, and in some cases, ‘for years follows what you are doing and their impact’ (A.I, B.I, C.I, D.I).

Donors usually have their own standardized ‘well defined systems in place for monitoring of projects’ that involve a ‘detailed results framework’ to identify expected ‘outcome outputs’ in advance (E). Annual work plans are decided in advance between the donors and the NGOs, based on NGO inputs on the ‘ground realities’ (E). The progress of projects is religiously and frequently tracked (A.I, B.I, C.I, E) Donors may allow for a degree of deviation but it has to be ‘very systematically informed and also reviewed’ (E). NGOs may also be expected to submit requests and clearly justify if they wish to change, add, or remove something from the project (E). Moreover, expenditure is often quite closely monitored by donors and any deviations from the submitted budget also needs to be justified. As one donor from the Swiss Agency for Development and Cooperation

(SDC) explained, ‘if there are delays, if there is something not going well,...fund utilization should also get reduced because you are not able to spend all that money’ (E).

This system of monitoring and evaluation can often be difficult for NGOs as it means that ‘a lot of the projects get linked to where the funding is coming from and how the funders look like it’ (A.I). As a DA employee acknowledged, there is a need to ‘educate your funder’ when it comes to climate change, but funders may not always be looking to be educated and may be ‘coming from a much larger perspective’ based on their ‘country program’, and ‘guidelines for international cooperation that they have defined for themselves, or their countries have pushed’ (A.I). According to her, success for donors is often predetermined and everything that the NGO does is ‘supposed to have succeeded’ with very little room for ‘a situation when things on the ground might lead...to different outputs’ (A.I). The employee also sees a lack of ‘being open to experimentation’ on the part of the donors, which may be cause for concern in the shifting nature of climate change adaptation (A.I). For instance, one PA employee states that if the metrics are not designed carefully for a cross-cutting issue like climate change, it could often mean that a project is only ‘ticking in certain boxes’ instead of using a truly ‘transformational approach’ that is integrated in the outcomes (D.I).

On the other hand, one challenge that the donors themselves face is not always being aware of the difference between ‘what is a development deficit and what is climate change adaptation’ (E). Donors may feel that when NGOs say something is climate change adaptation, they need to ‘have the data,...the analysis at the scale at which some of the NGOs work’ in order to back up their claims. However, this is not always easy as

NGOs may not have the ‘research capacity’ to support their claims. In this scenario, the donor from SDC thinks that the ‘recommendations from NGOs’ may ‘just become maladaptation’ in the long term. According to him, for the larger NGOs the ‘cost of managing the organization’, including securing funding, takes up more resources than they can spare for research in the field, and this can prove to be dangerous when it comes to climate change adaptation (E).

However, certain M&E practices can sometimes be useful for NGOs. Seeking third party external agencies to evaluate a project or a part of a project, or to provide support with a specific activity can be beneficial for NGOs that have the ability to invest in them. For instance, DA asked their ‘technology partner’ GramVani to seek Interactive Voice Response (IVR)-based feedback from local communities in Himachal Pradesh after launching their community radio programs. They received feedback to make the programs ‘continuous’ which the NGO was unable to fulfill due to ‘limited resources’ (A.I). Instead, DA continued providing support to other local partners in the region to run the radios there. (A.I). Another example of an NGO using external agencies to provide support is that of GEAG who sometimes seeks the expertise of external auditors to improve the running of their financial auditing system (B.I). These voluntary M&E practices have the potential to trigger other forms of learning, for instance, they enable direct learning for DA, who is able to seek feedback directly from grassroots communities.

In summation, current M&E practices may not always be a desirable learning mechanism for NGOs. Often NGO employees seem to think of M&E as something they must do in

order to stay accountable to their donor. In the case of ICSD for instance, there seems to be a heavy accountability to their donor Helvetas Intercooperation, which used to be their mother organization. The NGO employees hold a monthly Skype visit and periodic field visits with the donors (C.I). However, when NGOs are able to pursue their own assessments on their own terms either internally or externally, they are more likely to benefit from the endeavor

The researcher was able to get only a limited amount of information about any specific changes in M&E for climate change adaptation. Further research is needed to understand whether donors and NGOs are pursuing any major changes in their assessments in order to meet the challenges of climate change.

#### **4.4 Learning over Time and the Organizational Memory**

Organizational memory is an important form of learning that leads to the encoding and institutionalization of knowledge that can later be accessed and re-interpreted.

Organizational memory can also be indicative of long-term discursive shifts in an NGO's understanding of complex issues such as climate change over time, providing evidence of how learning occurs over time. The concept of learning over time has been explored in much greater depth in the following chapter. This subsection discusses the practices through which NGOs encode information to the organizational memory, and what this might mean for climate change adaptation.

All NGOs have their own unique practices for recording useful information that often becomes part of the NGO's organizational culture. For instance, PA employees record their Global Group meetings using a two-page note system that summarizes the

discussion and notes the agenda for the next meeting ‘because people...don’t have time to write....time to read’ longer reports. Similarly, DA holds a ‘quarterly review’ for all of the organization’s projects and programs but there is no available ‘document that captures’ this information (A.I).

For long-term documentation, most NGOs use some form of Management Information Systems to manage data during a project where information ‘from the field or from the experiences’ of the employees are ‘documented in a set format’ (A.I, B.I, C.I). For instance, DA claims that ‘right from its inception’ they have made a ‘conscious effort’ to create a ‘wealth of information relating to sustainable development issues’. In recent years, DA has been creating ‘interactive databases’ to share ‘knowledge and information’, MIS for ‘monitoring the operations’ of their projects, and ‘retro conversions’ of old project reports (A.3). Additionally, NGOs may maintain information about specific communities, for instance, ‘farmers’ databases’ where data sets of ‘what crops, how much input, how much output, profit’ etc. is maintained for each employee. This particular MIS database is later used for assessment but may also be useful to the organization itself (B.I). None of these practices are specifically unique for climate change adaptation, but have been learned by NGOs over time as the way of recording knowledge.

Another valuable form of encoding organizational memory that DA, GEAG and PA have adopted is online blogging. Online blogs may be meant to provide somebody external to the organization access to activities and information from within the NGO. But archived over time, these blogs can become a valuable tool that captures a different kind of



knowledge from that available in more formal parts of the organizational memory, such as annual reports or databases.

There are three categories of blog posts that emerge from the online blogs of these three NGOs: informational, emotive and personal. Informational blog posts can serve two possible purposes: they may aim to educate about concepts, or share lessons and knowledge from NGO-specific projects or events. Emotive posts tend to invoke emotions such as a sense of urgency or hope in the reader. Personal blog posts are normally reflective attempts by individual employees to share their thoughts and feelings on a particular topic. At times personal posts share individual stories of those who have been impacted by climate change, or who have benefitted from the NGO's attempt to improve the condition. One blog post may also fit into multiple categories.

The following table summarizes the kinds of blog posts and examples from each organization for climate change adaptation:

**TABLE 8: BLOG POST TYPES AND EXAMPLES**

Organization and Observations	Types and Examples of Blog Posts
<p><b>Alternative Perspectives, DA</b>  Posts run from 2013-2017. Posts are not tagged for topics but list individual authors and often include a disclaimer: ‘the views expressed in the article are those of the author’s and not necessarily those of Development Alternatives’. DA’s blogs are largely informational, but sometimes contain emotive elements that may be an attempt for employees to process emotions.</p> <p><b>GEAG</b>  The blog was started in January, 2016. GEAG blog posts are largely focused on the organization’s implemented projects. The posts often use metaphors that evoke imagery such as ‘seeds of resilience’, drowning ‘under the swirling waters’, ‘a landscape of change’ etc., as well as emotive passages (B.iii, B.iv, B.v). These blog posts seem to have been written from the point of view of informing readers, and continuing with the NGO’s trend of research-based advocacy, especially in the case of peri-urban areas and women farmers. The posts do not contain any personal reflections</p>	<p><b>Informational- Conceptual</b>  ‘Promoting resilience means encouraging cross-dialogue amongst different fields of social sciences, science, politics, and environment....such co-evolution can allow the entire system to exploit “shocks and disturbances like a financial crisis of climate change...”’ (A.i)</p> <p><b>Informational- Implementation</b>  “Multi crop systems that are not just climate resilient but also select appropriate crop basket for minimizing risks from one crop failure can be seen in farmer initiatives in Dhikoli. “ (A.ii)</p> <p><b>Emotive</b>  ‘How many degrees does the mercury need to rise, before we act on climate change? How many COPs must we wait for climate action, before we realise that it’s up to you and me? The answer my friend, is blowin’ in the wind; the answer is blowin’ in the wind...  ...and in the typhoons tearing through Philippines and hurricanes marauding America, gushing in the flood waters inundating Pakistan and India, crackling in the forest fires ravaging Australia’ (A.iii)</p> <p><b>Informational- Implementation</b>  ‘GEAG has been promoting peri-urban agriculture in 200 hectares of Gorakhpur...the underlying strategy is to make peri-urban farming economically viable among the farmers and demonstrate new techniques of farming which is climate resilient.’ (B.i)</p> <p><b>Emotive</b>  ‘There was a time when farming followed the proverbs and saying of the great poet Ghagh...’When you breathe out steam, then is the time to sow wheat’. Behind this simple statement lies the underlying science of adequate temperature conditions needed for wheat sowing...the individuals’ responsibility is to make an effort that this knowledge and the activities connected to it are inculcated in policies so that they become an integral part of the disaster risk reduction strategies.’ (B.ii)</p>

<p><b>PA</b></p> <p>Running since 2006 Practical Action has nearly 300 blog posts on climate change covering a range of projects, events (including every COP) and concepts from the perspectives of individual employees. The tone of these posts is not always geared towards informing others, but for individual employees to process their own thoughts and reflect upon their work. The organization even seems to encourage touching on what may seem like slightly more controversial topics, such as sharing frustrations about donors, which may not seem strategically beneficial to share with others. Overall, PA seems to be utilizing these blogs to encourage their employees to learn from one another and from themselves.</p>	<p><b>Informational- Conceptual</b>  ‘If we analyse the key elements of ‘community-based adaptation’ and ‘technology justice’ we can find a few commonalities...These connections can help these philosophies...to help each other and to help the poor communities vulnerable to climate change’(D.i)</p> <p><b>Informational- Implementation</b>  ‘Eight years ago when we proposed the Strengthening Livelihood Capacities to DRR in Nepal project (2007-2010), the communities knew their local environment was changing, but climate change was only a debated theory’ (D.xiii)</p> <p><b>Personal</b>  ‘Enneta Kudumba is one of the many farmers in Mutasa district, Manicaland Province who have successfully employed new farming technologies and methods to enhance their harvests given the detrimental effects of climate change’ (D.ii)  ‘I assure quality of donor reports, communicate with them, accompany them to the project sites and make sure they are HAPPY!...I don’t want to get fired and become unwanted....Yes; the only boss that I have- “The DONOR”!’ (D.xiv)</p> <p><b>Emotive</b>  ‘I look at Practical Action’s work and the devastating news we have heard from Kenya as a cruel drought continues to steal...ultimately people’s dignities....it made me wonder how many of the delegates are actually thinking what a deal actually means for people living in extreme poverty’ (D.xv)</p>
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Based on studying the blog categories above, it can be seen that while the blogs of DA and GEAG are more focused on informing the reader, those of PA are more often personal and reflective. When it comes to climate change adaptation, allowing employees the ability to share on an online platform in this way may be a useful reflective exercise for both the employees and the general public who read the posts in the short run. In the long run, if properly archived and tagged, these blogs can be a source of learning for newer employees coming into the NGO. Further research is needed to assess the usefulness of online blogs as a source of learning for NGO employees.

One challenge facing NGOs is that a robust organizational memory often requires ‘very systematic knowledge support systems and knowledge management systems’. As one DA employee pointed out, even large organizations such as DA have limitations in this area and ‘smaller, less...resourced NGOs’ ‘have it even more difficult because they work project to project’, they have a ‘limited intervention lifespan’ and they are highly dependent on funders (A.I). Additionally, NGO employees may often be unable to find time to properly reflect upon lessons from the past, even when they have been documented in some form (D.I). This can be problematic for a rapidly shifting subject like climate change adaptation where NGOs may be required to process large amounts of data, and make room for new information.

Overall, while NGOs may not be highly skilled at maintaining organizational memory due to their resource limitations and constraints placed on them by donors, there may be a possibility of increasing effectiveness by reflecting upon which kinds of information to prioritize, what valuable lessons from the past may be getting lost, and how can the NGO effectively make it available for future employees?

#### **4.5 Discussion on Teaching-Learning Spaces**

While examining learning mechanisms in this research study, it quickly became clear that NGOs were almost always simultaneously undertaking teaching as well. One of the major goals of any developmental NGO is to provide skills, information and knowledge that might help vulnerable communities overcome those vulnerabilities. In the case of climate change, this need for capacity building is often intensified due to unpredictability and uncertainty of climate impacts. Additionally, as experts on grassroots issues and

solutions, the inputs provided by these NGOs are valued by all levels of policymakers, national and international climate networks, donors, other NGOs and CSOs etc. (A.I, C.I). Hence the goal of lesson-sharing is always present in all four of these developmental NGOs. Collectively, all activities in which the NGO is providing information or training can be called teaching.

Therefore these development NGOs are never simply learning, they are also equally or more, committed to teaching. . For instance, in their media campaign on disaster and urban resilience in Gorakhpur, GEAG concentrated largely on teaching local school students about climate change (B.II). Similarly, through the Tara Livelihood Academy run by the Madhya Pradesh government, DA aims to provide training programs for watershed committee members about the ‘real time implications of climate change and how it can be built into the watershed management practices’, among other things (A.V). In both these cases, the focus of the NGO was more on teaching.

However, teaching and learning often takes place simultaneously and inextricably from each other. The interplay between these two processes can be seen as occurring in teaching-learning spaces where collective meaning-making, shaping of perceptions, and sharing of information takes place for different stakeholders. These spaces may be tangible and physical, such as a village meeting room, a conference or a workshop venue, but they may also be virtual in the form of online platforms or ICT tools that provide a means to seek specific information. At different times and in different spaces, the NGOs may be more or less dedicated to one or the other, and may use them in combination depending on the larger objectives of a project, kinds of activities undertaken, or on the

specific individuals or communities involved. The following table delineates the kinds of physical as well as virtual teaching-learning spaces that the four NGOs utilize:

**TABLE 9: TEACHING-LEARNING SPACES**

Teaching-Learning Spaces	Activities	Actors (Normally Involved)	Type of Learning (for NGO)	Examples
<b>Physical Spaces</b>	Baseline Surveys and Assessments	Communities, NGO employees	Direct Learning (Exploitation and Exploration), Indirect Learning	Vulnerability assessments (DA, GEAG, ICSD, PA), Participatory Rural Appraisal exercises
	Institution Building and Strengthening	Communities, NGO employees	Direct Learning (Exploitation and Exploration)	Farmer Clusters (DA)
	Skill-building Trainings and Workshops	Communities, NGO employees, external experts such as research institutions	Direct Learning (Exploitation and Exploration)	Farmer Field Schools (GEAG)
	Conferences	Local, regional, national and/or international stakeholders	Indirect Learning	National Conference on Peri-Urban Agriculture and Ecosystems, 2016 (GEAG)
	NGO Evaluations	NGO employees, donors, external evaluators	Learning through Assessment	Interactive Voice Response (DA)y7
	Awareness Campaigns Media outlets	NGO employees, general public or specific target group	Direct Learning, Indirect Learning	Climate Change: Disaster and Urban Resilience campaign (GEAG)
	Documentation	NGO employees, general public or specific target group	Learning through Organizational Memory	Process Documents (DA)
<b>Virtual Spaces</b>	ICT (Information and Communication Technology)	Communities, NGO employees, external experts such as research institutions	Direct Learning	Weather advisories (DA, GEAG, ICSD, PA), community radio (DA)
	Knowledge-sharing platforms and portals online	International, national or regional climate networks	Indirect Learning	Practical Answers (PA), Bundelkhand Knowledge Platform (DA)
	Blogs	NGO employees, general public	Learning through Organizational Memory	Online blogs (DA, GEAG, PA)
	Internal Learning Resources	NGO employees	Indirect Learning	Skype (DA, PA), Yammer (PA)
	Miscellaneous Online Resources	NGO employees, policymakers or other community resources	Direct Learning, Indirect Learning	Training modules for community radios in Himachal Pradesh (DA)

When it comes to climate change adaptation, these teaching-learning spaces may prove to be valuable for NGOs for a variety of reasons discussed below:

All four NGOs have discovered the importance of shaping the perceptions of different stakeholders about the shifting realities of climate change adaptation. On the ground, communities may often have some pre-existing sense or awareness of climate change, based on their experiences and traditional knowledge. In that sense, communities are often 'trying to adapt' on their own in order to 'cope with the changes' in climate (C.I). For instance, Development Alternatives found that farmers in Bundelkhand were using a range of 'traditional knowledge to understand weather and climate patterns' such as 'leafing, flowering and seeding patterns in Neem trees' and 'markers observed in animal behaviors' to 'make decisions about crop and irrigation cycles' (A.16) . However, DA employees learned that while the farmers were able to understand 'shifts in weather patterns', they were unable to comprehend a longer term shift and continued to 'take decisions as and when climate varied, rather than come up with a long term strategy for coping with impacts' (A.16). Hence the NGOs realize that a shift in perception and communication strategies was required in order to enable longer-term planning and understanding of the uncertainties associated with climate change adaptation. Their pre-existing teaching-learning spaces were not adequate and so the NGO explored new spaces such as community radio, and farmer clusters as a way of enabling continual interaction.

Secondly, all four NGOs pursue some form of community-based adaptation model which has 'time and space dimensions' i.e. specific locations will face very specific

problems which require local solutions that ‘put people in the center, and allow people to make their own choice’ (D.xi). In order to facilitate ‘community-led planning on issues like vulnerability and resilience’, social cohesion between community members, as well as shared spaces for iterative and reflective communication on the local challenges of climate change are needed (B.I, B.7, D.xi). Shared teaching-learning spaces provide an opportunity for NGOs to enable community-based adaptation that can empower local communities, facilitate effective decision-making, and encourage anticipatory and reflective learning. At the same time, these spaces allow NGOs to understand local challenges and become more efficient bridging organizations.

Finally, the complexity and vastness of climate change that encompasses topics ‘right from...physics and chemistry to agriculture, dairy’ etc. has made NGOs employees aware that ‘unlike the past...they cannot work alone’ anymore but require ‘partnerships and collaboration’ with other organizations to create shared solutions. By showcasing their best practices, NGOs are able to teach approaches that might prove beneficial for other stakeholders in climate change adaptation. According to one NGO employee from ICSD, these partnerships allow NGOs to ‘teach a lot of things’ and ‘learn a lot of things’ through exchanges that often happen in one or more of these teaching-learning spaces (C.I).

Overall, most NGOs do seem to be aware of the need to invest in both teaching and learning because they themselves do not have the expertise to tackle the challenges of climate change adaptation alone (A.I, B.I, C.I, D.I). At the same time, when it comes to conversations about concrete implementation at the grassroots level, NGO employees



give the impression of being more focused on teaching rather than learning, even though both are occurring simultaneously (A.IV, A.V, C.II). A deeper understanding of teaching-learning spaces may prove useful for balancing out the two processes for successful climate change adaptation that is community-led, anticipative, and integrative of both scientific and traditional knowledge.

#### **4.6 Conclusion**

This chapter discussed the ways in which the four NGOs employ the learning mechanisms of direct learning, indirect learning, learning through assessment and learning over time and through the organizational memory for climate change adaptation. NGOs use a combination of tried-and-tested, as well as new and unexplored approaches to meet challenges such as gaps in data, difficulties in translating the complex issue of climate change to local communities, and navigating the uncertainty of climatic impacts, that occur with climate change adaptation.

Moreover, this research indicates that learning at the individual level forms the foundation of what an NGO learns overall. As key actors that interact with communities on the ground, NGO employees are highly familiar with the issues of climate change faced by the grassroots. At the same time, by exchanging information and knowledge through various means, individuals also play a significant role in the formal and informal indirect learning that occurs within the NGO's boundaries. Overall, they bring in valuable information into the NGO.

The role of networks and partnerships also cannot be underestimated. These agents of learning offer opportunities for NGOs to discover new approaches for themselves, while

sharing their own best practices. Aware of the complex and vast nature of the development challenges associated with climate change, NGOs are beginning to see the benefits in forming partnerships and collaborations where every actor brings their own expertise to the table.

Another significant finding of this chapter is the interrelation between teaching and learning. This research reveals that teaching and learning are processes that often occur simultaneously in physical or virtual spaces. In this case, while NGOs are engaging in some combination of both processes at all time, they are not always reflective towards maintaining an appropriate balance between the two. When it comes to emerging field of climate change adaptation, it may prove to be beneficial for the NGOs to think about the interplay of teaching and learning that they engage in, and what sort of balance may help ensure that their learning is enhanced and directed towards reaching their goals. This discussion of reflecting on the enhancement of learning takes place in the next chapter.

## **Chapter Five**

### **The Temporal Dimension of Learning in NGOs**

In thinking of organizational learning as a process in which an organization institutionalizes something that it did not know or utilize before, learning possesses a temporal component i.e. it occurs over time. In trying to understand NGOs' learning over time, the duration in which learning has occurred and the timing of learning both play a role in when, where and how learning occurs. Studying the conceptual shifts in the discourses that the NGO uses may provide a picture of what knowledge the NGO absorbs over time. Hence it may be possible to deduce what external and internal factors may have played a role in shaping the lessons learned by these NGOs for climate change adaptation

In order to trace learning that is specific to climate change adaptation over time, conceptual discursive shifts in the ways in which the NGOs talk about adaptation can act as evidence. These shifts may occur due to external factors such as a growing global awareness of climate change, or may be a conscious result of internal reflections by the NGO on their previous work. Based on the evidence presented in this chapter, it seems likely that the shifts are induced by a combination of multiple factors. Conversations with NGO employees from the four NGOs for this research proved that employees are often aware of certain shifts, especially if they have been within the organization for a long time. For instance, a DA employee remembered the harrowing drought in Bundelkhand from 2004 to 2009 that led the NGO to the realization that they needed to reframe their work on the ground as a 'response to climate change'. In this case, it was through the

timing of the long drought that DA learned that the situation might not change despite mitigation and ‘so people will have to adapt’, leading to a drastic change in their strategy (A.I).

This chapter explores the similarities and differences in learning over time through the timing and duration of learning, and the role of the organizational memory on learning in these NGOs by following each NGOs use of six storylines: capacity building, climate smart agriculture, disaster risk reduction, natural resource management, resilience, and vulnerability

## **5.1 Development Alternatives**

When Development Alternatives was first established, the organization’s foundational goals were to ‘cater to at least the basic needs of all people, respect the limits of the environment and build the basis of a more secure future’ through ‘entrepreneurial approaches’, ‘technology and innovation’ and ‘community initiative’. Their work included sustainable livelihoods and agriculture, natural resource management and capacity building, among a plethora of other activities (A.2). Overall, DA’s approach towards climate change adaptation has remained true to its roots of natural resource management, but the NGO has learned that climate change communication is a key for them to reduce climate impacts on vulnerable communities.

By 2006, DA had conducted a study titled ‘Measures for Adaptation to Climate Change in Rajasthan’ (A.1). The NGO was then also advocating for mitigation within the international UNFCCC negotiations on Common but Differentiated Responsibilities and Respective Capabilities (CBRD-RC) (A.1, A.I). At around the same time, DA begun to

realize that Bundelkhand was witnessing ‘severe climate changes, thus affecting both lives and livelihoods of millions of poor people’, (A.2; A.I). However, the organization had not yet internalized the challenges of climate change and its implications on their projects with communities in Bundelkhand. Their discourse was concerned largely with sustainable development, seeing it as essential for ‘equity, ecological security, efficiency and empowerment’, and did not include climate change adaptation (A.2).

In 2008, DA celebrated its 25<sup>th</sup> anniversary. Using this event as an opportunity for internal reflection, the organization identified climate change as a ‘critical global challenge’ and a ‘global injustice’ because all ‘indicators point to the fact that the ones to be more severely hit by climate related events will be the poor, especially women’ (A.3). For an organization like DA, seeing climate change through a justice perspective from the beginning was easy, as it had been working for the development of vulnerable communities since its inception. At this point, DA realized that their core vision of ‘using green technology for sustainable livelihoods’ needed to be supplemented given the ‘new challenges of climate change’, among others . Hence, in 2008, the NGO first conducted ‘social vulnerability assessments’ and ‘economic costing of climate change impacts’ (A.3).

Between 2009 and 2010, however, DA continued revamping its strategy and recognized climate change ‘as one of the greatest environmental, social and economic threats facing our planet’ (A.5). Taking climate change seriously led DA towards a radical shift in the framing of their work. For instance, while DA continued their natural resource management projects such as an ‘Integrated Water Resource Management’ pilot in

villages of Bundelkhand, they rebranded it under the theme of developing ‘low-carbon pathways’ as an action against climate change (A.4).

On the other hand, DA also began more genuine attempts to truly understand climate risks in Bundelkhand. The organization undertook an entire project for mapping climate-induced vulnerability and adaptive capacity at different scales in Bundelkhand (A.10). Based on their emerging studies, DA learned that they needed to re-orient their existing strategies towards climate change communication. In 2009, DA launched the Shubh Kal (or ‘For a better future’)- a communication model with ‘several different types of climate-risk communication tools and material’ such as ‘community radio, schools, traditional media, nautanki (local folk theatre), songs and focus group discussion’ to explain the ‘risks of climate change’ to communities. They also launched Radio Bundelkhand, ‘a partnership initiative between DA and the local communities’ for ‘creating awareness about practical options for climate change’, among other things (A.6).

Continuing their commitment to natural resource management, when DA undertook a project in 2010 ‘to enable village communities to adjust their natural resource management and production system’ by the formation of clusters for farmers, women and artisans, they also focused on climate change adaptation (A.5). This adaptation focus was undertaken specifically in the farmer clusters where the purpose was to pursue ‘knowledge dialogues’ that would create community ownership for ‘climate friendly practices’, provide a platform for ‘discussions among partners/stakeholders to identify largely context relevant issues and lessons’ for climate change policy influence and ‘low

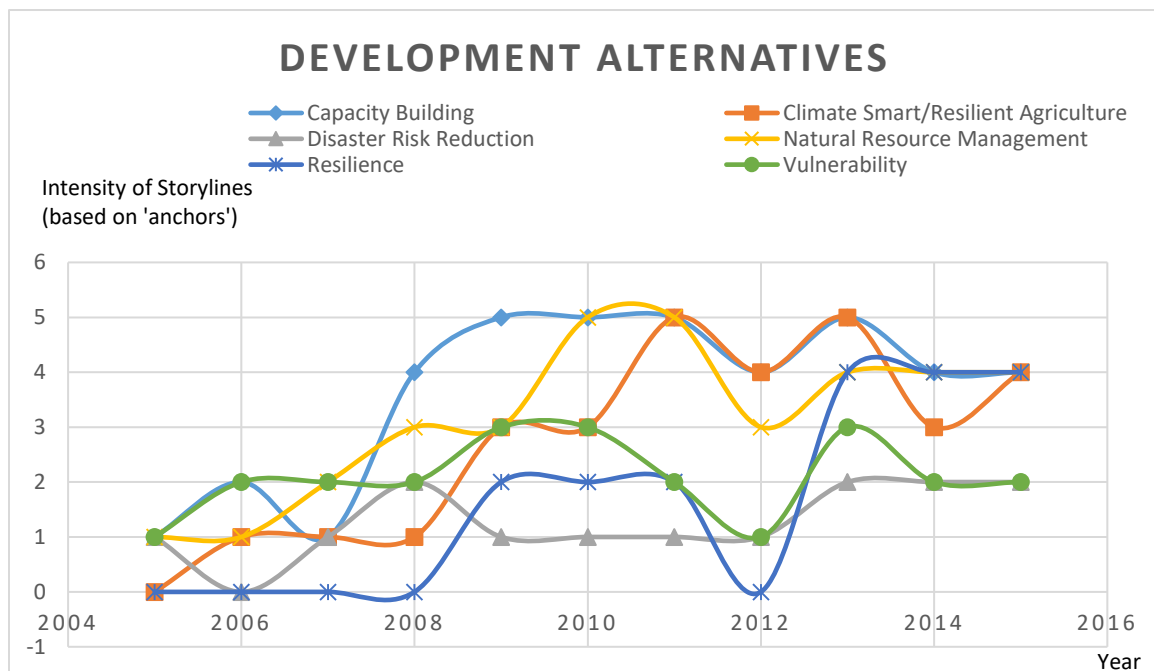
carbon resilient growth’, and provide relevant technical training and support for climate resilient agriculture (A.11). Alongside this project, DA launched the Bundelkhand Knowledge Platform for ‘sharing and consolidating knowledge, with a view to identify areas of interventions and connect the voice of grassroots with policy makers and researchers’ (A.6). The platform connected CSOs, government agencies, financial and academic institutions’ in the region of Bundelkhand (A.6). Hence DA grew committed to ‘collaborative action between civil society, research institutions and decision-makers on identifying and implementing the measures to reduce the risks of climate change faced by rural communities’ (A.4).

It was also in 2010, that DA started adopting the language of resilience with a ‘Community led Assessment, Awareness, Advocacy and Action Programme for Environmental Protection and Carbon Neutrality’ in Himachal Pradesh to make the state the ‘first climate resilient state by mobilizing community responsibility’ (A.5). During the project, DA carried out a number of assignments including the development of ‘knowledge and communication products’, and ‘institutional strengthening’ activities such as the provision of ‘carbon-environment assessments’ to ‘local panchayat resolutions’ (A.6, A.7).

By 2013, Development Alternatives had embraced the idea of ‘building resilience’ by pursuing natural resource management and strengthening rural livelihoods ‘in response to increasing impacts of climate change’ (A.8). The organization repackaged their 2010 project on natural resource management under the title of ‘resilience’ which continued with similar activities as before, scaling those up to 45 villages. (A.8). By 2015 however,

the NGO was working on multiple projects under a resilience banner: ‘Community resilience in Himalayan region’ which created an e-learning platform for ‘building capacities of the community radio station on climate change’ in Himachal Pradesh; ‘Water and Climate Resilience Programme’ in the Datia district of Madhya Pradesh to mainstream the context-specific climate-based (and other vulnerabilities), and a Resilience Framework for Measuring Development report that ‘elaborates on a set of indicators that can measure the resilient nature of development’.(A.10)

In summation, the graph below traces the flow of the different storylines used by DA to talk about climate change adaptation:



**FIGURE 3: STORYLINES OVER TIME FOR CLIMATE CHANGE ADAPTATION IN DEVELOPMENT ALTERNATIVES**

As the graph indicates, since 2009, DA has remained committed to climate change adaptation through one or more storylines, with the exception of 2012, in which the NGO



predominantly focused on its social entrepreneurship projects (A.8). Coming from natural resource management, a lot of Development Alternatives' work in climate change adaptation has revolved around better managing scarce resources against climate impacts. At the same time, the organization has also committed itself towards climate change communication, seeing it as an important component of building adaptive capacity for their different stakeholders. Various initiatives that Development Alternatives started when they first forayed into adaptation, such as Bundelkhand Knowledge Platform, adaptation clusters and Radio Bundelkhand still continue today (AI, AII, AIII), and provide evidence of the organization's enduring efforts in climate change adaptation.

## **5.2 Gorakhpur Environment Action Group (GEAG)**

In 2009, GEAG's first acted as an observer at COP 15 in Copenhagen. It was in the same year that the NGO was tasked with leading a project on urban climate change resilience by the transnational Asian Cities Climate Change Resilience Network (ACCCRN) (B.1). This project marked a major shift in GEAG's approach towards adaptation and has continued to shape the organization since then.

Until 2010, GEAG was primarily invested in sustainable agriculture in the rural parts of eastern UP, teaching low-input agriculture and livelihood diversification skills such as animal husbandry, livestock rearing, horticulture and floriculture etc. to small and marginal farmers, and women farmers. Their major goal until then was the 'economic empowerment of small, marginal, landless especially women farmers' through 'income generating activities that strengthen poor to improve their economic and social status' (B.1, B.2)

In 2010, while the NGO acknowledged that the floods/droughts in their 140 villages of operation in eastern UP were a manifestation of climate change impacts, their capacity building strategies at the teaching-learning interface with communities continued to remain largely free of any explicit dialogue on climate change (B.1). It was not until the ACCCRN project in 2011, that GEAG began reflecting on climate change adaptation in urban areas, and found themselves challenged as they realized that ‘working in urban areas is altogether a different ballgame’ (B.I).

Pushed into new territory, GEAG soon realized that urban communities lacked the cohesion of rural regions, which meant that ‘bringing them together on a common platform was difficult’ and required a different approach (B.I). The project’s goals were to conduct research on building climate change resilience for the ‘poor and vulnerable’ in the city of Gorakhpur through a focus on the behavioral aspects of communities in order to make citizens more ‘responsive, transparent and accountable’ towards one another as they faced climate impacts (B.1). To do so, GEAG adopted a Climate Resilience Framework designed by the organization ISET International that is part of ACCCRN. The framework links ‘understanding vulnerability’ and ‘building resilience’ as processes that must be undertaken simultaneously, and describes agents such as individuals and organizations, institutions (laws, policies, and cultural norms) and systems to capture urban resilience.

The approach within this framework consciously adopts ‘structured and iterative shared learning approaches that allow local planners to define...factors in their own context’ using Shared Learning Dialogues (SLDs) to focus on ‘capacity building’ and utilization

of ‘pre-existing skills and knowledge’ (B.7). GEAG used this approach to ‘build the understanding and relationships required to successfully engage in this work’ (B.7). The NGO created a citizen-owned, reflective, communication-based pilot project in a low income ward in Gorakhpur city between 2011 and 2012 which developed ‘community institutions...at the neighborhood level’ that could redress ‘disputes at hamlet and ward level’ (B.8).

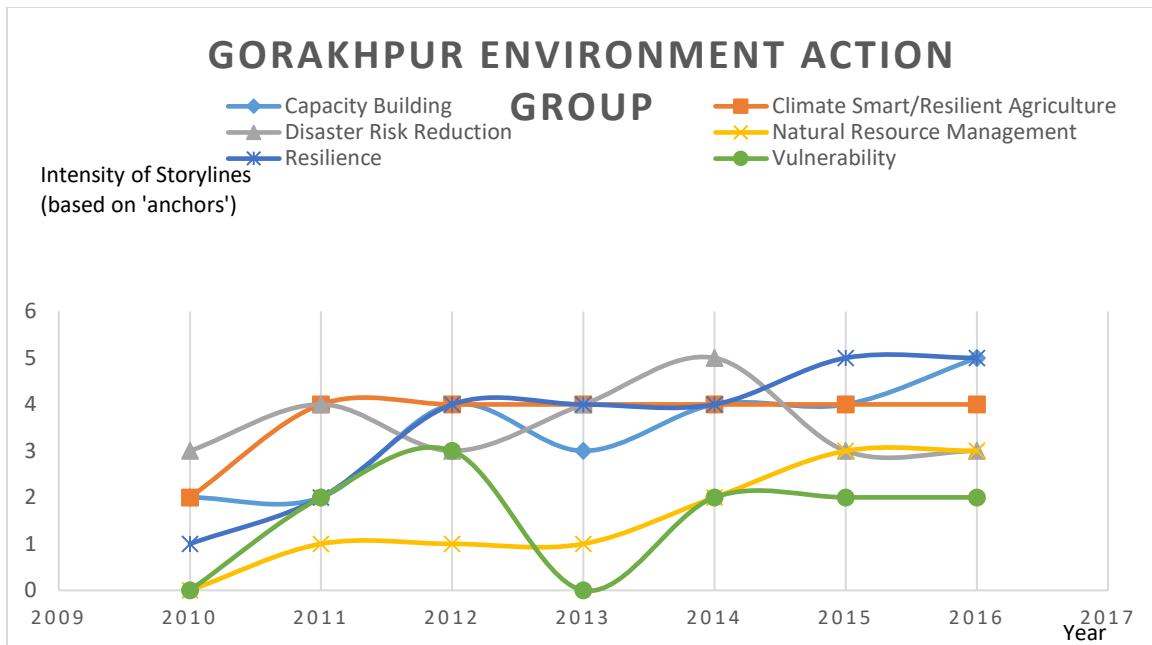
As a result of their research on urban resilience in Gorakhpur, GEAG realized that the city’s largest threats came from ‘declined ecosystem services’ which led to ‘flooding and waterlogging hazards’ among other problems (B.9). In order to build resilience, they needed to protect peri-urban agriculture which provided ‘open spaces for groundwater recharge, soil binding, recycling and soil fertility’, and supported ‘the large low-income populations living along the city fringes’ (B.9). GEAG hence grew committed to championing the cause of peri-urban communities who have remained largely invisible and marginalized in decision making (B.I). The NGO’s ‘research-based advocacy approach’ for the protection of peri-urban zones remains true to their founding strategy of awareness generation for environmental protection and advocacy for the socially marginalized from the 1970s and 1980s (B.I).

By 2011, GEAG’s thrust areas included acquiring ‘climate resilience through community participation’ (B.2). The lessons on urban resilience that GEAG learned from the ACCCRN project quickly began seeping into their work with farmers in rural communities, and in disaster risk reduction as well. The organization’s priorities shifted from merely enabling income generating livelihoods to ‘establishing innovative practices

for disaster and climate resilience in agriculture based livelihoods; linking development with disaster, climate resilience and advocacy at various levels’ (B.3). Furthermore, GEAG began reflecting on climate resilience in rural regions, realizing that ‘the linkage between climate change and rural systems are more easily understood and analyzed’ than those for urban regions (B.5). The NGO transferred the Climate Resilience Framework to rural regions to build capacity of agents through training programs for farmers, diversity of farm systems and sub-systems to make farming robust, and linkages between institutions such as Farmer Field Schools, Village Resource Centers, and government programs (B.8).

GEAG also utilized the framework for orienting policymakers on the basic concepts of resilience while working on a project for mainstreaming Disaster Risk Reduction in government departments of Gorakhpur, urging policymakers to formulate district disaster management plans that ‘focused on preparedness and mitigation’ by identifying ‘agents, institutions and systems’ as intervention points for directing action (B.6). This project was framed very differently from the NGO’s parallel work in urban resilience, where DRR components were integrated within the resilience storyline in urban, peri-urban and rural areas.

The following graph highlights GEAG’s progress in absorbing and utilizing climate change adaptation storylines between 2010 and 2016:



**FIGURE 4: STORYLINES OVER TIME FOR CLIMATE CHANGE ADAPTATION IN GORAKHPUR ENVIRONMENT ACTION GROUP**

The graph displays how GEAG’s commitment to the resilience storyline has grown and strengthened since 2010. This deliberate and reflective transference of the resilience storyline from its original urban framing to projects ranging from pre-existing rural and gender equity projects, peri-urban regions, and consultations with policymakers is the strongest singular example of learning that emerges from this research. While it is quite likely that this phenomenon was a result of a combination of factors in addition to the ACCCRN project, GEAG’s self-identification as a ‘vibrant learning organization’ that strives to maintain ‘its thematic and strategic relevance for the constantly changing needs and aspirations of the communities’ by upgrading ‘their futuristic knowledge, skills, competencies, security, and high degree of financial self-reliance may have played a role in this transformation (B.1).

### **5.3 Intercooperation Social Development**

As the branch of the Swiss NGO Intercooperation until 2010, ICSD was dedicated to the ‘principles of poverty reduction and strengthening social capital’ for rural populations across India through sustainable agriculture, natural resource management, institution building, and capacity building for local governance institutions (C.1). The NGO’s earliest foray into climate change adaptation in India may have come as a response to the Indian government’s National Action Plan on Climate Change (NAPCC). Since registering as an independent organization, ICSD has largely focused on capacity building and consultations for various state governments across the country.

Launched in June, 2008, the NAPCC consists of eight national level missions, some of which have direct bearing for adaptation. Each state was required to submit and update their own State Action Plan on Climate Change (SAPCC) for this purpose, and consults with stakeholders such as NGOs. ICSD saw ‘the sharing of good practices in adaptation to climate change’ as an important process ‘to guide implementation of the NAPCC’ and was chosen to ‘review experiences made in the Natural Management projects’ by the donor organization SDC (C.1). During this process, ICSD reframed their existing ‘NRM interventions’ as ‘development initiatives’ that ‘comprise adaptation elements inherently embedded in them’. Utilizing storylines about vulnerability and resilience may have been ICSD’s method for contributing to the strengthening national discourse on climate change (C.1). The ‘common components of all’ these projects included ‘community mobilization, enhancing skills and awareness building through training and access to information’ (C.1, C.2, C.3).

In 2010, ICSD registered as an independent non-profit organization, ‘stepping rather tentatively’ into ‘strengthening and building their small portfolio’ (C.4). In the immediate aftermath of this leap, while ICSD did not start entirely from scratch, it faced a dip in its activities, including those for climate change adaptation, as it struggled to find its niche. The NGO continued working with small and marginal farmers in paddy fields of Uttarakhand, providing livelihood diversification and institutional building support to rural communities (C.4). By 2011, ICSD had consolidated its overall organizational approach to three major thematic domains, which remain the same to this day: rural livelihoods, governance and climate change (C.5).

In terms of climate change adaptation, ICSD chose to provide support to various state governments in the preparation of their SAPCCs beginning in 2010 (C.4). The NGO extended facilitation and design support based on ‘making information accessible to a diverse range of stakeholders’, deriving from their NRM, rural livelihoods and governance background by focusing on ‘local issues’ (C.4). During a training needs assessment to identify and address gaps in knowledge on climate change for various state government departments in Himachal Pradesh between 2013-14, ICSD concluded that there was a need to understand projected climate impacts and vulnerabilities, focusing on disaster preparedness instead of ‘reaction’ to disasters, generating systematic awareness of climate change for legislators, educating village panchayat leaders, and moving towards sustainable agriculture (C.8, C.11)

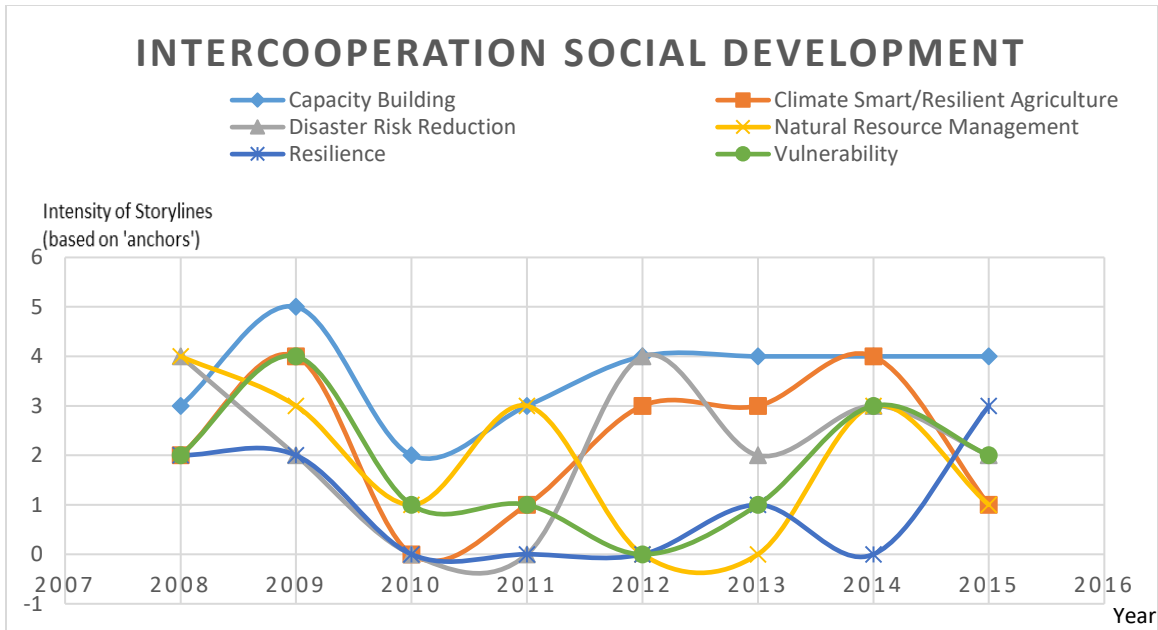
ICSD’s approach in rural communities has often focused on value chain addition for linking production, services and markets, while their climate change concerns have

largely been about mitigating carbon emissions from agricultural activities (C.4, C.5). It was only in 2014 that ICSD's discourse on rural livelihoods and agriculture started showing signs of integration with climate change adaptation when the NGO described their activities assessing climate impacts on crops and soil, identifying climate suitable crops and protecting indigenous biodiversity (C.7). In linking climate change adaptation with agriculture and NRM, one employee in 2016 stressed that the purpose was to 'ensure that the project being implemented on the field' would not 'disturb the biodiversity of that area' and to achieve this, ICSD's strategy focused, for example, on how to 'manage the rainfall that is available...how to introduce the crop which requires less water' (C.II).

In 2014 ICSD became a member of a Climate Proofing Growth and Development Innovation Programme- a multilateral network working on capacity building across states in various countries (C.8). Their capacity building work in the planning of the SAPCCs broadened ICSD's focus from the rural to the urban and began strengthening the NGO's vulnerability and resilience discourses (C.8). In late 2015, ICSD held a workshop on 'Climate Resilient Urban Development and Cities for All'. Attended by a small group of NGOs, policymakers, and experts, the workshop focused on urban infrastructure and green building, integrated solid waste management and sanitation, and environmental and social impact assessment in urban development (C.12).

The following graph displays ICSD's adoption of the storylines for climate change adaptation over time:





**FIGURE 5: STORYLINES OVER TIME FOR CLIMATE CHANGE ADAPTATION IN INTERCOOPERATION SOCIAL DEVELOPMENT**

ICSD’s course in terms of climate change adaptation may have changed direction since they became independent in 2010, when the NGO also saw an overall reduction in their implementation activities. The NGO has since remained committed to provide capacity building for state governments. ICSD’s verbal discourse contains signs of the presence of a climate change focus in their work on natural resource management and sustainable agriculture, but this is not mirrored as strongly in their documentation. In 2014 and 2015, the organization has begun refocusing on the vulnerability and adaptation storylines. The vacillation in storylines may be a result of fluctuating focus due to the project-based nature of implementation, especially for smaller and fresher NGOs like ICSD.

#### **5.4 Practical Action**

On completing 40 years as an organization in 2005, Practical Action reflected upon the challenge of climate change as a ‘terrible injustice’ which ‘threatens to plunge more poor people even more deeply into poverty’ (D.1, D.2). At that time, the organization’s

mission was to ‘eradicate poverty in developing countries through the development and use of technology, by demonstrating results and sharing knowledge and influencing others’ (D.1). In the decade since then, PA has built strategies for combatting climate impacts based on the principles of technological justice and sharing of knowledge and lessons. In 2004, when a Tsunami hit parts of Sri Lanka where PA was working, the organization saw this as an opportunity to ‘promote a sustainable, pro-poor approach’ which defined the direction from which they have largely continued approaching climate change since then- disaster risk reduction (D.1)

In 2006, PA decided to adopt a three-part plan for approaching the challenge of climate change: assist poor communities adapt to climate impacts, ‘climate-proof’ all their projects, and ‘persuade decision-makers to adopt more ambitious targets’ (D.3). The NGO saw knowledge-sharing as an essential part of this strategy. By this time PA was already attending the global COPs, ‘influencing their own governments’, building networks for future work, sharing their experiences, and even ‘spearheading an unprecedented march of thousands in Nairobi’ and later in 2009, ‘The Wave, UK’s largest ever climate change demonstration’ (D.vi, D.vii). Overall, Practical Action’s early focus in the negotiations in those years was to push for the ‘need for vital action on adaptation’, and help the ‘under-funded delegations...to negotiate with the hundreds of delegates that developed countries can afford to send’ (D.viii)

PA adopted climate change as a ‘cross-cutting area’ that impacted all their work by 2008. The NGO cemented their approach for ‘trial community based adaptation techniques’ which focused on ‘natural management for reducing climate change effects’ adaptation to

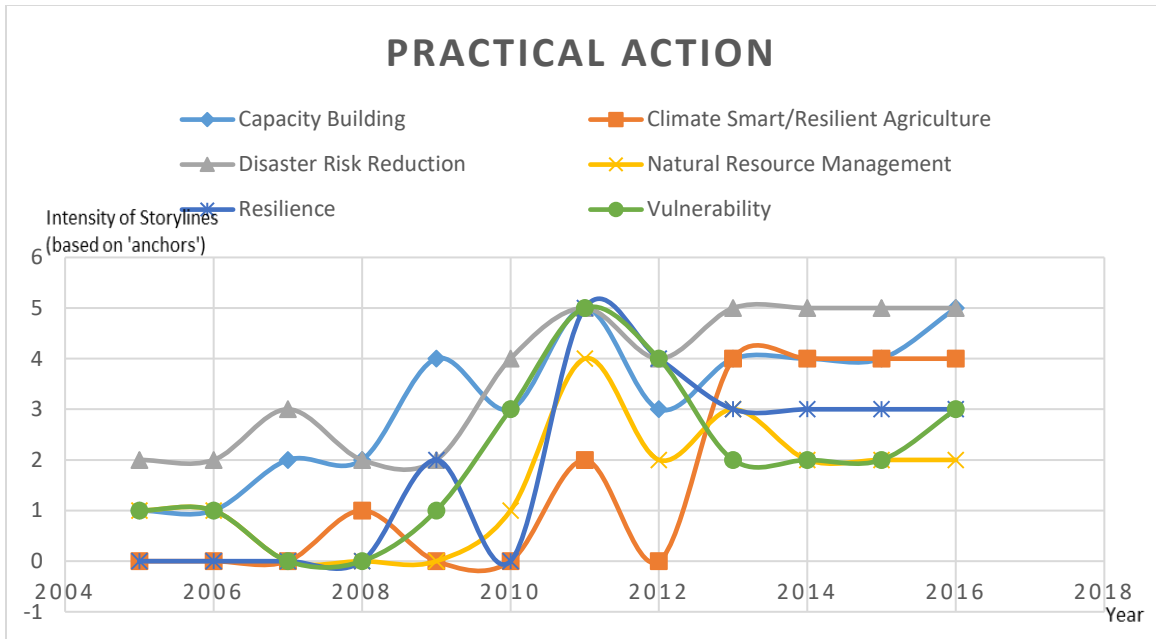
changing farming systems and practices; strengthening coping strategies of the communities and enhancing complementary livelihood options; and establishing the monitoring systems of climate change at the community level considering the social, economic and natural resource parameters.’ (D.ix). This approach meant getting communities to adopt climate resilient agriculture and undertake natural resource management to meet water shortages, deteriorating soil conditions etc., diversify into other possible livelihoods, and establish ‘Early Warning Systems’ to help ‘people prepare for and cope with the effects of flooding’ and other similar disasters (D.i).

By 2011, PA had amassed a wealth of experience in community-based development which culminated in a document titled ‘From Vulnerability to Resilience: A Framework for analysis and action to build community resilience’ for sharing their V2R (Vulnerability to Resilience) framework. The framework focused on creating community-centered projects in all stages from analysis, planning and implementation to strengthening their voice in external decision-making (D.11). Through this framework, PA was able to merge approaches for DRR, sustainable livelihoods and NRM, vulnerability and resilience together, which the NGO reasoned was advantageous in order to ‘address the underlying institutional, structural and ideological factors that contribute to vulnerability’ (D.11). Seeing the inclusion of the latest local climate information into these programs as one possible challenge to their community-based DRR planning, PA also published an approach with a six-stage process for integrating climate data into program planning in 2012 (D.x).

The NGO first used the term ‘technology justice’ in their annual report in 2012, defining it as ‘the right of people to decide, choose and use technologies that assist them in leading the kind of life they value without compromising the ability of others and future generations to do the same’ (D.8). Later in 2016, an employee in PA explained the connections between climate change and technological justice in the context of disaster risk reduction by stating that ‘the way in which technology is accessed, innovated and used is critical to the effectiveness’ of our response to the impacts of climate change’ (D.i). Practical Action sees technology as ‘central to monitoring risk exposure’ and to ‘support people to respond to risk’ (D.i)

PA first set up their branch in India only in 2013. Their earliest projects in the country have been in water and sanitation, and cooking stoves with a gender focus in the state of Odisha. Climate change adaptation is not a large part of Practical Action India’s mandate on the field so far, except in Practical Action Consultancy, which works with ‘governments...climate agglomerations’ and other organizations that need technical or policy-based consultancy ‘based on the knowledge coming from the grassroots implementation’ (D.I).

The following graph displays the shifts in PA’s utilization of the climate change adaptation storylines:



**FIGURE 6: STORYLINES OVER TIME FOR CLIMATE CHANGE ADAPTATION IN PRACTICAL ACTION**

The graph shows how DRR has taken center-stage in PA’s work on climate change adaptation over the years. The NGO has also continued finding ways of marrying their technology-based origins with their work on climate change adaptation over the years

### 5.5 Discussion about Learning over Time

The above narratives about learning over time provides a different dimension from which to approach learning. It demonstrates how learning for climate change adaptation has unfolded differently over time in each of the four NGOs

The table below illustrates how each NGO has chosen to adopt each of the six storylines that are relevant to climate change adaptation. The differences in when and which storylines each NGO has chosen to invest its resources in may depend on the factors that matter to learning over time: organizational memory and the perception of the past and

future, duration of learning and timing of learning. Each of these are discussed in detail in this subsection.

Organization	Storyline	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Development Alternatives	1	*	**	*	****	*****	*****	*****	*****	*****	*****	*****	*****
	2		*	*	*	***	***	*****	*****	*****	***	****	
	3	*		*	**	*	*	*	*	**	**	**	
	4	*	*	**	***	***	*****	*****	***	*****	*****	*****	
	5					**	**	**		*****	*****	*****	
	6	*	**	**	**	***	***	**	*	***	**	**	
Gorakhpur Environment Action Group	1						**	**	*****	***	*****	*****	*****
	2						**	****	*****	*****	*****	*****	*****
	3						***	*****	***	*****	*****	***	***
	4							*	*	*	**	***	***
	5						*	**	*****	*****	*****	*****	*****
	6							**	***		**	**	**
Intercooperation Social Development	1				***	*****	**	***	*****	*****	*****	*****	
	2				**	*****		*	***	***	*****	*	
	3				****	**			*****	**	***	**	
	4				****	***	*	***			***	*	
	5				**	**				*		***	
	6				**	*****	*	*		*	***	**	
Practical Action	1	*	*	**	**	*****	***	*****	***	*****	*****	*****	*****
	2				*			**		*****	*****	*****	*****
	3	**	**	***	**	**	*****	*****	*****	*****	*****	*****	*****
	4	*	*				*	*****	**	***	**	**	**
	5					**		*****	*****	***	***	***	***
	6	*	*			*	***	*****	*****	**	**	**	***

FIGURE 7: SHIFTS IN STORYLINE OVER TIME

Storyline Key	
<b>1</b>	<b>Capacity Building</b>
<b>2</b>	<b>Climate Smart Agriculture</b>
<b>3</b>	<b>Disaster Risk Reduction</b>
<b>4</b>	<b>Natural Resource Management</b>
<b>5</b>	<b>Resilience</b>
<b>6</b>	<b>Vulnerability</b>

FIGURE 8: STORYLINE KEY

Color Key			
Number of Stars	0 or 1	2 or 3	4 or 5
Color			

**FIGURE 9: COLOR KEY**

### **5.5.1 Organizational Memory and Perception of the Past and Future**

From the discussion of the NGO’s learning over time, it can be seen that organizational memory and where the NGO is coming from played a huge role in the direction in which the NGO’s understanding of climate change adaptation takes them. DA has been constantly present in Bundelkhand as an organization promoting land and water management, and sustainable agriculture and livelihoods. Even when the NGO realized the importance of adaptation, they stuck to their roots. Similarly, GEAG started as a small environmental awareness and advocacy group, and traces of this can still be found in their approach towards climate change, especially in their research-based advocacy efforts for peri-urban farmers. GEAG also chooses to fold in their adopted resilience framework into their pre-existing projects with rural communities across UP. ICSD initially started thinking about climate change adaptation by applying a climate lens to their past NRM initiatives across India, which lead the NGO towards acting as a consulting organization for state governments formulating their SAPCCs. Finally, PA’s work in technology justice and their involvement during the Tsunami in Sri Lanka led them to approach climate change largely from the perspective of DRR.

This seems to indicate that the pre-existing organizational memory plays a large role in directing where NGOs concentrate their resources when it comes to a vast and amorphous area of focus such as ‘climate change adaptation’. Employees from all four

NGOs choose to recall their organization's past and reflect upon it through a climate lens, when asked to talk about climate change adaptation (A.I, B.I, C.I, D.I). This indicates that the past is never fixed in the organization's memory but morphs constantly as the NGO continues to learn.

Similarly, the NGOs are constantly dwelling on the future as they learn. This can be seen most strongly when the NGOs reach some sort of milestone such as their 25<sup>th</sup> (in the case of DA) or 40<sup>th</sup> (in the case of PA) anniversary. NGOs often take their milestones to think about how they want to change their approach in the future. When it comes to climate change adaptation, both DA and PA have used their anniversary milestones to formally acknowledge the importance of adaptation in the face of the urgency of climate change.

Another important aspect that may impact learning over time and the organizational memory is that sometimes NGOs may be unable to commit to strong and reflective documentation that can assist their organizational memory, even when individual learning may be taking place on the ground. For instance, in talking to NGO employees of ICSD, NRM and sustainable agriculture appeared as an important component of their understanding of climate change adaptation in 2016. However, this storyline did not come across as significant in tracing learning over time through the organization's documentation. It is important to note that this difference in priorities could be a result of resource constraints and time frames. In the long run, both verbal and document-based sources may contribute to organizational memory, thus impacting learning. The size of the NGO may also play a role in this- being geographically more contained may allow ICSD to commit less to their written organizational memory. However NGOs may



benefit from reflecting upon their commitments to the written organizational memory over time.

Overall, the differences in the definitions of climate change adaptation in each of these NGOs are significant. It might be useful for NGOs to be more aware of the angle from which they are approaching adaptation so that they can ask themselves they need to shift into a different storyline of adaptation. The NGOs may also find this useful for reflecting upon the kinds of partnerships and teaching-learning spaces that will prove to be most fruitful- those where actors working on specific separate storylines get together, or those where particular combinations of storylines converge at particular points in time.

### **5.5.2 Duration of Learning**

When it comes to the duration of learning, very similar patterns can be observed across the four NGOs. For the bigger NGOs with more international roots, climate change adaptation appears to have gained significance in discourse at around the same time in 2008-2009. Before this, DA and PA both refer to climate change adaptation but do not acknowledge it as one of their main themes of focus in any capacity. Similarly, while ICSD formally started using the climate lens to rethink their past in 2008, once the organization registered independently in 2010, they take until 2012 to start recovering their commitment to any of the adaptation storylines in a significant way. It is also around 2011-2012 that the more geographically-contained GEAG first seriously begins adopting the resilience storyline, and carrying it into their work in other sectors of the NGO.

Moreover, the culture of organizations may play a role in how long NGOs take to adopt a storyline. For instance, GEAG calls itself a learning organization, and this is reflected in

how quickly the NGO picks up and transfers the resilience narrative across their organization. GEAG's documents also reveal that the NGO appears to have taken a comparatively thoughtful and critical stance in thinking about this adoption. Similarly, PA's documents reflect the humbleness with which they have approached climate change adaptation. The NGO is constantly dwelling on how much more they need to learn from the communities they work in. This might be mirrored in their V2R framework and community-led adaptation approach which commit resources to learning on the ground. One of PA's employees also pointed out that spending more time with communities on the ground is the most important part of their work, but one that the NGO is constantly working on improving (D.II). Overall, the duration of timing may be significant because it reflects the organizational culture. Being slower or faster may not matter as much as being thoughtful and open to shifts in understanding for climate change adaptation. The significance of these differences in learning types is further discussed in the subsequent section on the loops of learning in this chapter. Finally, duration of learning matters but only in conjunction with the timing of learning, which may not always be in the hand of the NGO, and yet may have a significant impact on when and what the NGO learns.

### **5.5.3 Timing of Learning**

The timing of learning denotes when an NGO chooses to adopt a particular storyline for climate change adaptation. Timing appears to play a significant role in when these four NGOs commit themselves to a particular storyline. All four NGOs in this research start committing themselves to climate change adaptation in varying capacities between 2008-2012. Based on the available data, the timing of a number of internal and external factors

are likely to have played a role in influencing these decisions. These factors may depend on: local circumstances, global changes in discourse, or internal NGO milestones.

Local circumstances may play a big role in the timing of learning for NGOs because the NGOs are committed to the grassroots, and must respond to shifting realities on the ground. For instance, DA's commitment to adaptations seems in part to have been a response to the devastating drought in Bundelkhand in 2004-2009 with serious consequences for local communities (A.I). Similarly, the Tsunami of 2004 in Sri Lanka where PA first-hand witnessed the devastation and contributed towards provision of disaster relief may have been one of factors impacting PA's decision for entering the adaptation conversation through DRR.

On the other hand, shifts in the global discourse can seep down, often through donors to local NGOs. GEAG's urban climate change resilience project funded by the Rockefeller Foundation through ACCCRN is a strong example of this. Gorakhpur was one among three Indian cities that were chosen for this project, leading to GEAG's involvement in urban resilience (B.I). The timing of this project seems to have had a huge impact on the direction of the NGO's learning.

Finally, internal NGO milestones and circumstances can impact learning as well. This can be seen in both DA and PA, who used their anniversaries to commit to climate change adaptation in a much more serious manner than before. On the other hand, when ICSD became an independent organization, the NGO saw an abrupt drop in their commitment to climate change adaptation that they took a few years to recover from.

This drop may also have shifted the direction and priorities of their learning capacities from NRM-centric to capacity building for state governments across India.

Hence the timing of learning seems to play a significant role in which storyline is adopted by the NGO and when. Overall, a combination of the three components of the time dimension for learning: organizational memory, duration and timing play a role in which storylines seek prominence for NGOs committed to climate change adaptation. Looking at learning as a dimension of time is useful in order to better understand learning that has been institutionalized at the level of the organization, rather than the learning that takes place between individuals, networks and partnerships. Having thus understood learning from different dimensions, one important question that emerges is: how effective is this learning for the four NGOs in this research, and how can learning be enhanced over time? This question is now approached in the last section through a discussion on loops of learning.

### **5.6 Discussion on Loops of Learning and Learning Barriers**

So far the evidence of learning in four diverse development NGOs working on climate change adaptation in India has been extensively examined through learning mechanisms that govern how learning takes place through individuals, networks and partnerships; as well as through the dimension of time which allows exploration of how and what the NGO learns as a unit, and how different NGOs may adopt different storylines for climate change adaptation. One question that still remains, however, is whether all learning is the same, and if not, what are the different kinds of learning between which an NGO might choose in order to be effective for climate change adaptation?

In order to answer this question, this thesis uses the loops of learning framework evidence of different kinds of learning within NGOs. This could provide insights that might guide the underlying motivation of how learning might be enhanced.

### **5.6.1 Evidence of Loops of Learning**

Single-loop learning is routine-based and corrective learning that asks the question, ‘how do we do something right?’ On the other hand, double-loop learning requires NGOs to critically examine their assumptions and values in order to answer the question, ‘are we doing the right thing?’

Evidence of routine-based single-loop learning can be found in all four NGOs in the form of tweaks or adjustments that NGOs make frequently, as part of their day-to-day functioning in similar or slightly varied contexts. When it comes to climate change adaptation, it seems that in some cases NGOs have chosen to undertake only single-loop learning in order to meet newly emerging challenges. Some of the most common forms of evidence of single-loop learning for climate change adaptation can be seen within changes in the NRM and sustainable agricultural storylines commonly used by NGOs on the ground, shifts in the participatory approaches used with community members, and changes in interaction between individuals within the NGO. The following table provides examples of first loop learning in each of these categories:

**TABLE 10: EVIDENCE OF SINGLE LOOP LEARNING**

<b>Evidence for:</b>	<b>Example</b>	<b>NGO Name</b>	<b>Learning Mechanism</b>
Changes in the NRM and Sustainable Agricultural Practices Storylines	Bringing ‘ideas, knowledge and technology’ to farmers of paddy fields in order to help them cope with long-term change for efficient ‘water use management’ because ‘resources are getting risky and limited’ (C.1)	ICSD	Direct Learning
Changes in Participatory Approaches	Using ‘Shared Learning Dialogues’ to create new teaching-learning spaces between key stakeholders for ‘identifying and prioritizing the vulnerabilities in Gorakhpur’ (B.7)	GEAG	Direct Learning
Changes in interaction between individuals within the NGO	Removing climate change as a separate Global Group so that discussions about it could be integrated across other Global Groups such as those for DRR and Sustainable Agriculture (D.I)	PA	Indirect Learning

Hence single-loop learning can prove to be valuable for incremental adaptation to climate change. However, one question worth asking is: is single-loop learning enough or is it possible that it may make NGOs complacent that they are doing enough, even though they might not be? For instance, most of the NGO employees contacted for this study seemed confident that their contributions were helping farmers adapt, even when their actions on the ground continue to be incremental, and may not be enough for meeting unexpected perturbations related to climate change. This indicates that NGOs may need to be more robust in asking themselves whether they are doing enough, or if something more is needed to be done?

Double-loop learning may have the potential to offer more meaningful leaps for meeting the challenges of adaptation than single-loop learning. Evidence of double-loop learning does emerge from this study, largely in tracing learning over time. This indicates that double-loop learning is a slower and longer-term process that may require significantly

larger investments of time and energy than single-loop learning. Since time and energy are valuable commodities for NGOs as they work on a project-by-project basis and depend on donors for a number of resources, these barriers may make double-loop learning more challenging for NGOs than it is in the for-profit sector. Nonetheless, signs of double-loop learning for climate change adaptation in the four NGOs are promising.

This research indicates that double-loop learning does not occur in isolation, but in tandem with single-loop learning. This is not surprising, given that single-loop learning is any NGO's default incremental response to every challenge, enabling change without radically altering organizational structures and values. The following table provides evidence of double loop learning, and examples of associated single loop learning for the four NGOs:

**TABLE 11: EVIDENCE OF COMBINATIONS OF SINGLE AND DOUBLE LOOP LEARNING**

NGO	Evidence of Double-loop and Single-Loop Learning
DA	<p>‘Commitment to communicating climate change in locally relevant and culturally appropriate ways’ in order to enable ‘adaptation strategies based on long term impacts and solutions’ (A.16). This is an example of double-loop learning where DA chooses to rethink its entire strategy for adaptation in the region of Bundelkhand. An example of single-loop learning within this approach is the use of the Bundelkhand Knowledge Platform for ‘sharing and disseminating the climate change adaptation knowledge across all the stakeholders’ (A.16)</p>
GEAG	<p>Recognition of peri-urban areas as flood buffers to protect Gorakhpur city, and improve the condition of peri-urban farmers is an example of double-loop learning where GEAG chooses to extend their urban resilience focus to a new area. Within this broader strategy, the NGO’s adoption of strategies from their rural sustainable agriculture background with changes to accommodate awareness of climate risks is an example of single-loop learning (B.I, B.7, B.11)</p>
ICSD	<p>For ICSD, creating their entire thematic structure after registering as an independent organization is double-loop learning where the NGO chose to adopt rural livelihoods, climate change and social development as its themes (C.5). At the same time, ICSD’s commitments within adaptation have been incremental e.g. adoption of similar NRM projects for land and water management have continued as before (C.I, C.II)</p>
PA	<p>The introduction of the V2R framework in recognition of the fact that the challenges of climate change need to be understood within all the ‘social, political and economic factors from agriculture to poverty to health services etc.’ (D.II) is an example of double-loop learning. Within this framework, an example of single-loop learning may be the continued attempt of ‘locking communities into technology that is useful’, while meeting the ‘threats’ of climate change (D.II).</p>



Hence all four NGOs have taken occasional leaps of learning that fit into the characteristics of double-loop learning. The degree to which these changes have included foresight and deliberation, as opposed to being pushed by external events and circumstances may say something about the effectiveness of learning. Given the possibility that double-loop learning may have been random and forced instead of deliberate, it makes sense to ask ourselves whether there is benefit in engaging in triple-loop learning for climate change adaptation.

Triple-loop learning is a process that induces learning about learning, and involves a transformation of the existing system. In the case of the four NGOs examined here, the limitations to learning that come with the donor-driven system that the NGOs operate in, are acknowledged both explicitly and implicitly by NGO employees. For instance, a PA employee dedicated to learning feels that ‘donors always exist on deliverables’ which do not include learning (D.I). The ‘price’ of learning in the form of ‘time, resources, finances etc.’ has to therefore be paid by the NGO and individuals within the NGO. This is a big barrier that prevents deeper levels of learning, because the environment itself is not conducive to learning, and does not reward it. Other NGOs indicated more subtly that the stringent output-orientation of donors makes it tough for them to shift the paradigm in any meaningful ways as they may see fit (A.I, C.I). This dichotomy may exist because donors are looking at climate change from a Northern-led global perspective, whereas the NGOs themselves are focused at the grassroots level in the South (A.I). Thus signs of triple-loop learning are largely absent from this study.

Overall, this study indicates that NGOs learn at single- and double-loops of learning. Single-loop learning is often the most common form of learning but learning at this level is incremental, and may lead to compliance within NGOs that they are doing enough for climate change adaptation. On the other hand, double-loop learning is undertaken by NGOs at certain significant points in time, but may not always be deliberate. In these cases, it may prove beneficial for the NGO to ask itself whether learning at these levels is enough, or if there is a need to invest more consciously at triple-loop learning that can in turn induce more deliberate and thoughtful single- and double-loop learning.

## **5.7 Conclusion**

In this chapter, the dimension of time in learning was approached, and the role of timing, duration, and the organizational memory in the direction from which the four NGOs have chosen to approach climate change adaptation, and the influences it has had on how and what the NGO has learned about adaptation was understood. Learning in the NGO as a whole may be slower, influenced by external and internal events, and dependent on the memory of the organization, and the reflections of its employees on the past and the future. These insights may provide intervention points from which to alter learning because being conscious of the temporal dimension of learning can reveal previously unseen opportunities hidden in the folds of time. For instance, if an NGO is aware that they have adapted the resilience storyline rapidly and effectively for climate change adaptation, they can start thinking on a conceptual level about which elements of the storyline to keep and which to phase out and over what duration, how to integrate useful elements from other storylines, and so on.

This is when the NGOs might also find the loops of learning useful. Loops of learning allow the organization to assess the quality of different forms of learning, and the possibility for transformation. By consciously thinking about learning, NGOs may have the potential to overcome barriers that may be standing in the way of their larger goals of empowering and protecting vulnerable communities from the challenges of climate change.

## **Chapter Six**

### **Conclusion**

Climate change is a global challenge, whose impacts are likely to manifest themselves in diverse and often unexpected ways in this century and beyond (IPCC 2013). This is particularly problematic for a country like India, which has a large population vulnerable to the burdens of development, and climate risks alike. Thus the actors working at the intersection of traditional development and climate change adaptation need to be better prepared to meet emerging challenges. As one such prominent non-state actor, NGOs in India may need to be more reflective, flexible and anticipatory in order to face the dynamic and unpredictable nature of adaptation for climate change.

Organizational learning could prove to be useful for such NGOs, but there has been very little research that specifically examines this for climate change adaptation within NGOs. Therefore, this thesis has tried to identify the organizational learning mechanisms that NGOs use, and to identify what and how they learn about climate change adaptation over time in four development NGOs in India. The underlying motivation behind this research has been to a desire to explore the possibilities of enhancing learning for such NGOs.

#### **6.1 Learning about Climate Change Adaptation: From the Level of the Individual to the Organization**

The evidence for answering the two primary research questions asked in this thesis has come from interviews, which provide privileged access to the unwritten processes of teaching and learning that take place in NGOs, and from discourse analysis of NGO documents, which individually lay out a NGO's perspective of climate change adaptation

at particular points in time, and together provide a sketch of how learning takes place over time. Together, this evidence indicates that NGOs are constantly learning.

Reflecting on how, when and in what combinations this learning takes place in NGOs could offer insights into how they can be more effective learners for climate change adaptation.

### **6.1.1 Learning Mechanisms**

At any given time, a NGO learns through a combination of one or more of these learning mechanisms: direct learning, indirect learning, learning through assessment, and learning over time and through the organizational memory. The primary agents enabling these learning mechanisms are the individuals that lay the very foundation of what knowledge is distilled into the organization. Partnerships and networks are also conducive in introducing NGOs to new approaches and form of thinking from other stakeholders embedded in similar, or even different development contexts at local, regional, national and international levels. Together, individuals, partnerships and networks determine what and how a NGO learns.

As NGOs utilize the learning mechanisms mentioned above, they are constantly forced to choose between different combinations of pre-existing and previously unused approaches for climate change adaptation, as a result of limited time and resources.

Working against the backdrop of this tension, NGOs may often be constrained from choosing ambitious and innovative approaches over tried-and-tested methods of doing things. This could be one of the reasons why the glimpses of learning obtained from interactions with individual NGO employees at any point in time reveal that learning at

this level is often incremental. Hence, in order to understand how incremental learning may lead to more substantial shifts in the understanding of climate change adaptation, there is a need to turn towards the temporal dimensions of learning.

### **6.1.2 Temporal Dimensions of Learning**

In the long run, the knowledge that distills into NGOs through learning mechanisms may become institutionalized, which means that it may largely become an accepted and somewhat rigid part of the organizational culture and memory. A study of the temporal dimensions of learning for the four NGOs included in this research reveals that given the amorphous nature of climate change adaptation, there are vast differences in how each of the four NGOs approach and understand it, and that this understanding within individual NGOs itself has undergone rapid shifts through time in the past decade.

The reflections of individuals within the NGOs on the past and future of the organization, as well as the timing and duration of learning, is of crucial importance for which storylines of climate change adaptation a NGO focuses on, and how that focus may shift with time. The reflections of NGO employees on the past and the future can define how the NGO sees itself as an entity, thereby influencing how it approaches adaptation.

Similarly, the duration of learning from the level of the individual to that of the institution may be dependent on how conducive the NGO's culture is towards learning. Finally, the timing of broader changes in the multi-level systems in which NGOs are embedded, play a huge role in determining what a NGO learns.

### **6.1.3 Tensions/Interrelations at the Juxtaposition of Learning Mechanisms with Temporal Dimensions of Learning**

The juxtaposition of evidence obtained from examining the learning mechanisms, and the temporal dimensions of learning within the four NGOs in this research give rise to certain observations about tensions/interrelations between processes and definitions, each of which are discussed below:

#### ***6.1.3.1 Tensions between Teaching and Learning***

This research reveals that learning by development NGOs for climate change adaptation does not occur in isolation, but is inextricably tied together with the process of teaching. This gives rise to teaching-learning spaces where a combination of both processes may occur simultaneously, with the NGO choosing to pay differing degrees of emphasis to teaching or learning. Hence, there is a tension within the NGO in dividing time and resources between the processes of teaching and learning. This tension extends from the individual level, all the way to the organizational level. It may vary between points in time, depending on the stakeholders involved, the geographical scale of a particular teaching-learning space, and the role that NGO employees may be trained to see themselves playing in a given context.

When it comes to working with grassroots communities and local governing institutions for climate change adaptation, for instance, NGO employees are typically trained to be in learning mode when they first go into a new community (A.III), or when they first start a new project (B.I, C.I). In this case, the focus on teaching is lower and the NGO is largely absorbing information, often through different forms of vulnerability assessments, which

later informs their implementation. However, as the NGO formally enters its implementation phase, the focus of employees may shift from learning towards teaching (A.I). This could partly be a result of the constraints under which the NGO functions within its relationships with donors, who constantly ask NGOs to remain outcome-focused, and driven by M&E.

On the other hand, when it comes to other teaching learning-settings such as online forums, conferences or workshops where NGO employees are interacting with partner organizations, and experts who are part of regional, national or international networks, NGOs may be more focused on learning than teaching (C.I). All four NGOs in this research recognize the importance of such teaching-learning spaces for sharing best practices, approaches and strategies, and using these as opportunities to connect with, and learn from other actors (A.I, B.I, C.I, D.I). However, this balance of teaching and learning may shift depending on the role a NGO sees itself playing in a particular context. For instance, GEAG hosted a conference on peri-urban ecosystems with the purpose of research-based advocacy for the marginalized populations in these regions (B.I). In this case, while GEAG seems to have maintained a sound balance between teaching and learning, their primary interest may have been to inform and advocate, rather than learn others (B.10).

This tension between the processes of teaching and learning is visible to a lesser degree in the NGO documents. The purpose of these documents often seems to be to inform the reader about an NGO's successful practices and initiatives. However, the tone that NGOs takes within these documents may sometimes speak to the tension between teaching and



learning. For instance, Practical Action often appears to take a humble stance in their documentation, referring to financial and contextual setbacks (D.5, D.6, D.9), and the need to do and learn more in order to scale up the impacts of the organization's 'small' (D.2) projects through 'influencing the policy and practice of others' (D.3). PA's numerous blog posts on climate change adaptation are also often a source of internal reflection where individual employees highlight drawbacks and frustrations with the systemic barriers facing them, in addition to sharing their success stories, as forms of learning. On the other hand, documentation for DA focuses largely on the organization's successes, with one outstanding exception during the Bundelkhand droughts in 2007 where the NGO acknowledged a need to assess climate risks, and potential adaptation measures in the region (A.2). The difference between the tones of the two organizations could likely be a result of security- the UK-based PA is more likely to feel secure and confident, whereas for an Indian NGO like DA, the constant struggle to prove themselves as a valuable actor for climate change may be why the NGO's documents focus largely on success stories.

Hence there is a constant push-and-pull relationship between teaching and learning for climate change adaptation within these NGOs. This means that, given limited resources, NGOs may need to reflect on how to maintain a balance between the two processes when it comes to the shifting and uncertain nature of climate change adaptation.

### ***6.1.3.2 Interrelations between Learning at the Individual and Organizational Level***

Learning in NGOs is highly dependent on both, the individuals that learn, and the institutionalization of learning that occurs at the organizational level, often defined by the

organizational culture and memory. For instance, by deliberately calling themselves a learning organization, GEAG may be inducing an organization-wide practice of sharing and reflection. This is evident in the ways in which the NGO has chosen to tie together their work in urban, peri-urban and rural areas under the resilience storyline. On an individual level, however, conversations with the GEAG employee did not reveal any novel learning practice as compared to the other NGOs in this research that could provide an explanation for the rapidity with which the NGO learns at the organizational level. Further research may be needed to explore this interrelation between learning at the individual and organizational levels.

### ***6.1.3.3 Tensions between Definitions of Climate Change Adaptation***

Finally, given the amorphous nature of climate change adaptation, there were some differences in what NGOs choose to discuss when asked to talk about climate change adaptation, and what their documents reveal about the organization's understanding of adaptation. This contrast was revealed most starkly in ICSD, where individuals stressed greatly on the Climate Smart Agriculture (CSA) storyline, as a major part of their adaptation strategy with paddy farmers in Uttarakhand (C.I, C.II). However, CSA is rarely mentioned in ICSD's annual reports. Instead, the focus on paddy farmers in Uttarakhand, seems to be largely on the mitigation of emissions during agriculture alone. Under climate change adaptation, the NGO documents largely focus on providing support to state governments working on their SAPCCs. This might be reflective of differences in how ICSD as a whole sees adaptation, versus how individuals within ICSD see adaptation. This incongruence, which was not visible between the individual and

organizational levels of the other three NGOs, may also speak to the nature of ICSD's culture, which may not be as conducive to the transfer of knowledge from the level of the individual to that of the organization.

Overall, this discussion reveals the nature of teaching and learning processes as adopted by these NGOs, as well as the larger differences in learning from the level of the individual to that of the organization. Further research may make the interplay between these processes, and levels clearer, and highlight possibilities that may exist for enhancing learning in these cases.

## **6.2 Possibilities for Enhancing Learning for Climate Change Adaptation**

When it comes to enhancing learning for climate change adaptation, the framework of single-, double-, and triple-loop learning may be beneficial for NGOs to understand how to overcome existing barriers to learning. All four NGOs in this research study engage in single- and double- loop learning in different capacities. However, there is little to no evidence available of the kinds of transformational changes that could be associated with triple-loop learning in these NGOs. The one possibility that emerges from the evidence of learning within these four NGOs, is that there are some attempts by certain individuals to learn about learning at single- and double-loop levels. For instance, certain employees within PA are thinking about how to integrate learning as an objective in PA's projects (D.I).

However, achieving the kind of triple-loop learning that alters the very structure of an NGO may require paradigm-shifts on a wider scale than merely that of an individual NGO. Such paradigm shifts could perhaps be induced if NGOs tap into their networks

and partnerships, and choose strong leaders that can transform the system. Thus the larger ecosystem within which an individual NGO is embedded, is significant when it comes to inducing triple-loop learning because paradigm-shifts are not likely to be induced by a single NGO.

If paradigm-altering triple-loop learning is indeed to be adopted by NGOs, what might be the existing enablers and barriers acting at different levels? One of the largest barriers for triple-loop learning in the four NGOs examined in this research, comes from the donor-NGO system within which NGOs function. Within this system, parameters for success are often pre-determined in a seemingly democratic way, but NGOs are largely accountable to their donors in terms of the timeline of work (E), the financial and material resources spent (E), and even the kinds of conceptual approaches that they use (B.7). This is the ‘accountability myopia’ that Ebrahim (2005) highlights, preventing NGOs from fulfilling their accountability towards the grassroots where it is owed, and instead making them dependent and answerable to their donors. If this paradigm is to be shifted, triple-loop learning may need to occur on the inter-organizational level with NGOs and donors coming together to transfer more power to the NGO, in comparison to the donor.

At the same time, another associated learning barrier for NGOs is the sense of urgency that drives them. NGO employees are aware of the seriousness of meeting their obligations towards grassroots communities, acknowledging that they are engaging in a form of experimentation that requires communities to take a leap of faith with the NGOs, where failure could prove to be dangerous for the communities (C.I). This sense of

urgency may cause NGOs to be largely implementation-focused, leaving little to no time for learning. Moreover, combined with the push from donor organizations to meet pre-defined parameters of success, this may mean that NGOs are unwilling to dwell on failures (D.I), or to consider the possibilities of maladaptation (E). One PA employee suggests that this situation can only be changed if stronger feedback loops between learning and implementation are engraved into the project management cycles that NGOs undertake, and if learning is clearly pre-defined as an objective for the organization as a whole, including but not limited to their work on climate change adaptation (D.I). By inducing NGO employees to focus explicitly on learning, NGOs may be better positioned for deliberate learning at different levels.

Additionally, if the final accountability by NGOs is owed to local communities, learning should not exclude these communities. By their own admission, employees from the four NGOs studied here are usually good at cultivating relationships and building trust with local communities over time (A.I, B.I, C.I). This trust could form the foundation of more transformative forms of learning.

On the other hand, even if the NGOs decide to continue working incrementally for adaptation, they may need to be iterative and reflective more frequently than they are now, in to be prepared for the shifting challenges of climate change. In that situation, trust between NGO employees and local communities is paramount if both sides are to learn rapidly and continuously. Such incremental shifts may not be possible within the current donor-NGO paradigm, but even small tweaks and adjustments in the ways in

which the project management cycle is run, and assessments are submitted, may lead to successful incremental adaptation.

But if transformation is seen as inevitable, NGOs must keep in mind that triple-loop learning may not be free of drawbacks: Firstly, as these development NGOs are aware, their work involves a certain amount of ‘social engineering’ that can alter very lives and livelihoods of vulnerable communities (C.I). This is a serious responsibility and transformational alterations carried out by the NGOs can therefore have dangerous consequences. Secondly, theory suggests that triple-loop learning may even alter the very fundamental nature of an organization, leading to loss of identity and even collapse (Bateson 1973; Tosey, Visser, and Mark 2011). This is a possibility that NGOs must be aware of if they attempt a radical alteration of the current development paradigm. Finally, there is little concrete evidence of such radical transformations in the literature, and hence a solid roadmap of what this might look like is missing. In such circumstances, triple-loop learning becomes even more challenging because nobody knows exactly what it is, where it leads, and whether or not it is even possible to undertake deliberately.

### **6.3 Concluding Remarks**

In conclusion, NGOs are most likely to benefit from putting more foresight and planning into learning. This involves thinking about the relationship between the processes of teaching and learning, dwelling on the learning that takes place at the level of the individual and the ways in which it is distilled to the institutional level, and seriously reflecting on the loops of learning, including the possibilities of transformation, and factors that may inhibit or enable learning for climate change adaptation. A more

deliberate focus on learning may prove to be beneficial to take NGOs where they want to go as they work at the intersection of development and climate change adaptation.

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APPENDIX A

CODED LIST OF INTERVIEWS, DOCUMENTS AND BLOGS

## Development Alternatives

**Interviews:** A.I, A.II, A.III, A.IV, A.V

### **Documents:**

<b>Code</b>	<b>Document name</b>
A.1	Annual Report 2005-06: Creating Sustainable Livelihoods
A.2	Annual Report 2006-07
A.3	Annual Report 2007-08: Celebrating 25 Path-Breaking Years of Development Alternatives
A.4	Annual Report 2008-09
A.5	Annual Report 2009-10
A.6	Annual Report 2010-11: Creating Sustainable Livelihoods
A.7	Annual Report 2012: Building a Nation Fit for Our Children
A.8	Annual Report 2013: 30 Years of Innovating and Delivering Eco-solutions
A.9	Annual Report 2014
A.10	Annual Report 2015
A.11	Vulnerability Assessment and Adaptation Planning for Madhya Pradesh, 2009-10
A.12	Farmers Adaptation Cluster 2011
A.13	Intervention in Farmers Adaptation Cluster 2012
A.14	Climate Resilient Development in Bundelkhand Region of MP: Mainstreaming Climate Change Adaptation in Policy and Planning 2013

A.15	Climate Resilient Development in Bundelkhand Region of MP: Vulnerability and Adaptation Assessment 2013
A.16	Climate Resilient Development in Bundelkhand Region of MP: Information and Communication Needs for Adaptation 2013
A.17	<a href="http://www.devalt.org/GlobalInitiatives.aspx">http://www.devalt.org/GlobalInitiatives.aspx</a>

**Blogs posts** (only those used in text are listed here):

<b>Code</b>	<b>Document name</b>
A.i	Understanding a Resilient World, Mandira Thakur, 2016
A.ii	TARAGram Yatra 2015: Building Resilience in Agriculture for Food Security, Anshul Bhamra, 2015
A.iii	It's time to be impatient; it's time to take charge!, Mayukh Hajra, 2015



## Gorakhpur Environment Action Group

Interview: B.I

### Documents:

Code	Document name
B.1	Annual Report 2010-11
B.2	Annual Report 2011-12
B.3	Annual Report 2012-13
B.4	Annual Report 2014-15
B.5	Stepping Towards Resilience through People's Participation
B.6	District Disaster Management Plan Gorakhpur, The Formation Process 2013-14
B.7	Building Micro Resilience in Gorakhpur City, 2014
B.8	Inclusive Resilience: Stories of Small Marginal Women Farmers, 2015
B.9	Wheezing ecosystems, livelihood services and climate change resilience in Uttar Pradesh, Amit Mitra, Shiraz Wajh and Bijay Singh, 2015
B.10	National Conference on Peri-Urban Agriculture and Ecosystems, 2016
B.11	Peri-urban agriculture and ecosystems: Resilient Narratives, 2016

**Blogs posts** (only those used in text are listed here):

<b>Code</b>	<b>Document name</b>
B.i	Farmers fight Climate Change: Turn resilient, 2016
B.ii	Indigenous Traditional Knowledge: For Disaster Reduction Risk in DDMP, Archana Srivastava and Ravi Prakash Mishra, 2016
B.iii	A landscape of change: Where women farmers helped rethink resilience, 2016
B.iv	Seeds of resilience: Peri-urban farmers turn innovative, 2016
B.v	‘Khet Chodab Naahi’: Our Land, Our Life, 2016

### **Intercooperation Sustainable Development**

**Interviews:** C.I, C.II

**Documents:**

<b>Code</b>	<b>Document name</b>
C.1	Climate Resilient Development: Synthesis Report- Towards Adaptation to Climate Change, 2008
C.2	DRR and Development Experiences and Opportunities in South Asia, 2008
C.3	Climate Change: Vulnerability and Adaptation Experiences from Rajasthan and Andhra Pradesh
C.4	Annual Report 2010-11
C.5	Annual Report 2011-12
C.6	Annual Report 12-13

C.7	Annual Report 2013-14
C.8	Annual Report 2014-15
C.9	Getting Climate Smart for Disasters in Coastal Regions, 2013
C.10	Quarterly News Post for April-June 2014, 2014
C.11	Training Needs Assessment for Adaptation Planning and Implementation in Himachal Pradesh, 2014
C.12	Proceedings on workshop on Climate Resilient Urban Development and Cities for All, 2015

### **Practical Action**

**Interviews:** D.I, D.II

### **Documents:**

<b>Code</b>	<b>Document name</b>
D.1	Annual Report 2004-05
D.2	Annual Report 2005-06
D.3	Annual Report 2006-07
D.4	Annual Report 2007-08
D.5	Annual Report 2008-09
D.6	Annual Report 2009-10
D.7	Annual Report 2010-11
D.8	Annual Report 2011-12

D.9	Annual Report 2012-13
D.10	Annual Report 14-15
D.11	From Vulnerability to Resilience: A Framework for Analysis and Action to Build Community Resilience, 2011
D.12	The Right Climate for Development: Why the SDGs Must Act on Climate Change, 2014
D.13	Gender Approaches in Climate Compatible Development: Lessons from India, 2016

**Blogs posts** (only those used in text are listed here):

<b>Code</b>	<b>Document name</b>
D.i	Technology Justice for Risk Reduction, Colin McQuistan, 2013
D.ii	Zai pit technology increasing yields in Mutasa, Martha Munyoro Katsi, 2016
D.iii	Markets for Disaster Risk Reduction, Colin McQuistan, 2014
D.iv	Community flood resilience in Peru, Linda Costabile, 2014
D.v	Disasters, climate change and development: what do we need to do differently?, Jonathan Ensor, 2011
D.vi	The Verdict..., Angelique Orr, 2006
D.vii	50,000 people Waving not drowning, David Flint, 2009
D.viii	Pushing adaptation up the agenda, Jamie Clarke, 2007
D.ix	A good year for Nepal, Upendra Shrestha, 2010
D.x	Climate Change and Disasters- What we can do, Maggie Ibrahim, 2011

D.xi	Community-based adaptation and ‘technology justice’, Maseeb Md Irfanullah, 2014
D.xii	Weather information board enhancing community resilience, Upendra Shrestha, 2016
D.xiii	The value of going back: livelihoods in the catchments of the ‘mad river’, Dinanath Bhandari, 2014
D.xiv	The only boss that I have- “The DONOR”, Samjhana, 2014
D.xv	A new decade- let’s start it with dignity, Jane Eason, 2009

APPENDIX B  
STORYLINES AND ANCHORS

Storyline	Core Anchors	Secondary Anchors	Periphery Anchors
<b>Capacity Building</b>	<p>1) Building social and human capital of vulnerable communities</p> <p>2) Enhanced exposure to traditional and scientific knowledge</p> <p>3) Provision of technological and biophysical resources to protect livelihoods, improve quality of life</p>	<p>1) Governance support across state, district, local departments for integrating climate change into planning aspects, or preparing state action plans</p> <p>2) Conducting research-based advocacy and providing feedback on national (or regional or bilateral/multilateral) government schemes and policies</p> <p>3) Linking institutions with local communities and other actors for facilitative dialogue</p> <p>4) Working internationally on advocacy and policy</p> <p>5) Knowledge sharing platforms</p>	<p>1) Sharing with other NGOs through conferences, workshops, trainings, digital platforms</p> <p>2) Awareness drives and campaigns</p> <p>3) Advocacy via international and national networks</p>
<b>Climate Smart Agriculture</b>	<p>1) Promoting climate-resilient and sustainable agricultural practices including land/water management, cropping and diversification techniques, use of organic manure etc.</p> <p>2) Solutions are built to be site-specific, keeping local social, economic and environmental concerns in mind.</p>	<p>1) Appropriate institutional and governance mechanisms are incorporated to complement the uncertainty of climate change impact on agriculture, disseminate information and promote learning through broad participation</p>	<p>2) Financial mechanisms to relieve economic stresses on farmers e.g. value chain assessment, price negotiations, compensation through pricing mechanisms</p> <p>3) Coordination of policy instruments to improve communities' access to relevant policies</p> <p>4) Basic NRM for agriculture without climate change lens</p>
<b>Disaster Risk Reduction</b>	<p>1) Long-term analysis linking disasters to the resilience and/or</p>	<p>3) Working alongside/ influencing national, state and/or local governments to focus on DRR within sectors such</p>	<p>5) Focus only on short-term, material relief</p> <p>6) Developing contingency plans alongside</p>

	<p>vulnerability narrative</p> <p>2) Multi-pronged, multi-sectoral approaches against climate change and natural disasters.</p>	<p>as agriculture, water, urban development and housing etc.</p> <p>4) Innovating and promoting technological advancements to combat disaster impact on lives and livelihoods</p>	<p>communities or policymakers to enhance disaster preparedness with the recognition that climate change is likely to increase frequency/intensity of disasters</p> <p>7) Forming networks to provide relief and spread awareness.</p>
<b>Natural Resource Management</b>	<p>1) Linking NRM to multiple services: agriculture, water and sanitation, land use and forestry, biodiversity and livestock with a climate lens for long-term sustenance and conservation</p> <p>2) Promoting social learning for NRM</p> <p>3) Technology transfer and technical skills transfer</p>	<p>1) Conducting technical or social research into possible solutions for NRM in the context of future climate trends through pilot projects and/or their scaling up.</p> <p>2) Capacity building that is institutional (building community institutions or aligning governance institutions with climate change NRM objectives)</p>	<p>3) Focus on short-term NRM without a climatic lens</p> <p>4) Sharing lessons and learning with other organizations and partners working on NRM</p> <p>5) Media campaigns for target audiences (such as school students) to promote basic NRM household strategies.</p>
<b>Resilience</b>	<p>1) Creating links between different scales of operation within communities and in government departments and sectors, with outside experts from</p>	<p>1) Building social resilience through institutions, and practices for shared learning and community cohesion geared at protecting livelihoods and natural resources.</p> <p>2) Helping communities and governments in planning and preparedness against natural disasters</p>	<p>1) Preparing baselines to monitor and understand the situation by mapping vulnerabilities. This is often the first step of a longer project.</p> <p>2) Starting awareness building activities with communities</p>



	<p>universities, CSOs, markets and other relevant institutions.</p> <p>2) Promoting learning and sharing lessons learned and best practices</p> <p>3) Engaging with the concepts of resilience- requires linking across systems</p>	<p>3) Strengthen livelihood options through new methods, technological innovation or diversification techniques</p> <p>4) Enhance access to scientific and technical knowledge and validate traditional knowledge</p>	
<b>Vulnerability</b>	<p>Alternative development pathways are discovered and power structures are addressed</p> <p>Promoting multi-sectoral planning</p>	<p>Contextual vulnerability places harm from climate impacts at the center of other political, institutional, economic and social structures, asking which groups are more impacted and why. In this case, institutional and socio-economic constraints are addressed in order to reduce inequities through:</p> <ul style="list-style-type: none"> <li>- capacity building, adaptive management</li> <li>-focus on livelihoods and coping strategies</li> <li>-enhancing social capital</li> <li>-reducing inequities and addressing local constraints</li> </ul>	<p>Outcome vulnerability:</p> <ul style="list-style-type: none"> <li>-sectoral focus on what causes climate change impacts?</li> <li>-solutions are about reducing sectoral sensitivities, technological adaptation, reducing GHGs</li> <li>-studies focus on sectoral sensitivities and future climate change impacts</li> </ul>