



SPARC

Supporting Pastoralism
and Agriculture in Recurrent
and Protracted Crises

TECHNICAL REPORT

WHAT HAPPENED WHEN RESILIENCE-BUILDING PROJECTS CLOSED

Stories of change from Chad

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About SPARC

Climate change, armed conflict, environmental fragility and weak governance, and the impact these have on natural resource-based livelihoods, are among the key drivers of both crisis and poverty for communities in some of the world's most vulnerable and conflict-affected countries.

SPARC aims to generate evidence and address knowledge gaps to build the resilience of millions of pastoralists, agro-pastoralists and farmers in these communities in sub-Saharan Africa and the Middle East.

We strive to create impact by using research and evidence to develop knowledge that improves how the FCDO, donors, non-governmental organisations, local and national governments, and civil society can empower these communities in the context of climate change.

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TABLE OF CONTENTS

Executive summary	4
Why retrospective learning is essential	4
The differences between successful and unsuccessful introduced innovations	4
What retrospective learning tells us about supporting resilience	5
1. Introduction	7
1.1 The purpose of the research	7
1.2 The project and its context	7
2. Six stories of attempted change	9
2.1 Agricultural extension for climate-smart agriculture	9
2.2 Groups for vegetable or market gardening	10
2.3 Community grain banks for an informal safety net	12
2.4 Creation of rural resource centres	13
2.5 Women’s life skills training and gender dimensions of resilience	14
2.6 Early-warning committees	15
3. Conclusions: what the stories tell us about resilience-building	16
3.1 The importance of ‘the adjacent possible’	16
3.2 Confidence, trust and institutions	17
3.3 The continuing relevance of knowledge systems	18
3.4 Asking the question ‘what works?’	19
References	20

EXECUTIVE SUMMARY

Why retrospective learning is essential

At the 2024 UN Climate Change Conference ('COP29'), the global community committed to invest in climate adaptation to protect the lives and livelihoods of people in poorer countries. Many argue that the sums promised are insufficient, but even those pledges will bring about progress towards climate change adaptation only if the investments actually have positive impact. That cannot be taken for granted, since those financing and implementing programmes to increase resilience and support climate change adaptation have largely avoided finding out how far those programmes have achieved change. It is rare to find lessons drawn from return visits a few years after programmes have ended, and as a result far too much investment is made based on untested assumptions about what will 'work'.

This report presents what was learnt from returning to a project that had aimed to 'improve community resilience through climate-smart agriculture' in Dar Sila region in the southeast of Chad from 2015 to 2017.¹ This report is one of a series of such retrospective impact studies of resilience programming by the Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises (SPARC) research programme.² Two researchers, who were familiar with the area from the beginning of the project, visited eight villages, talking to women and men, visiting markets and observing in non-project villages.

The differences between successful and unsuccessful introduced innovations

We found visible changes that were attributable to the project. Fruit trees had become common, and had spread beyond project villages; newly introduced varieties of food crops had become common in the local markets; and even the faces of women looked brighter, attributable at least in part to a reduction in conjunctivitis due to the introduction of improved stoves that women now enthusiastically repaired for themselves. Behaviour, or even social norms, had also changed. Women were strikingly more assertive than they had been, at least collectively in meetings.

Change could be seen as a demonstration of agency because farmers chose which agricultural innovations to adopt. Several ideas were simply abandoned because they were not liked. The project had supported women to practise horticulture collectively, but many women's groups collapsed, because women did not have the ability to control the group leaders when they appropriated resources for themselves. However, the practice of growing vegetables often continued, but on an individual basis. This possibility had not been offered

1 This was part of a cross-border programme implemented in Chad and in Darfur, Sudan, by Concern Worldwide, funded by the UK government through its Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) programme (www.braced.org/about/about-the-projects/project/?id=db586dc7-4407-444a-87c7-40f1f1768dd4).

2 Levine et al. (2024) look at public works programming in Ethiopia and Kenya; Bedelian (2025) studied the development of pastoralism through market development in Somali Regional State, Ethiopia; and Agol (2025) reports on a multisectoral resilience programme in pastoral areas in Turkana, Kenya.

to women at the start. Similarly, village-level 'resource centres' for collective learning all collapsed. Communities had no way of controlling the use of the resources they were given, including solar panels and pumps, and a training centre had no reason to exist – learning was not a collective activity for them.

Other institutions fared better. Community grain reserves were set up to provide resources for a village-level safety net, extending the previous practice of communities in offering assistance to a few individuals in the event of shocks such as house fires. Prearranged resources allowed villages to extend support to far more people, and thus to respond to shocks such as rain failures. Although this might have been the most risky institution, relying on regular contributions from the village for a store that was governed by a small committee, community grain reserves continued to function well, because the local moral economy had existing rules governing community support.

What retrospective learning tells us about supporting resilience

▪ The importance of 'the adjacent possible'

Societies or communities can more easily make changes where there is some continuity with how they behaved previously. Where several changes have to happen at the same time, in technical, social or psychological terms, change may be too great an evolutionary leap. Resilience may best be supported by avoiding rapid transformations in favour of more organic evolution.

▪ Confidence and trust

Introduced changes need to be technically and economically appropriate, but they also need to be within people's ability. All change depends on having the confidence to master something new. Where change has an institutional dimension, far greater confidence levels are needed for people to be able to work together collectively, managing each other's behaviour and holding each other to account. Collective action also requires minimum levels of trust: actual levels of trust vary hugely from community to community, so that each village may have to find its developmental pathways. Interventions bringing change need to be designed so that they minimise the confidence and trust thresholds.

▪ The continuing relevance of knowledge systems

External interventions continue to take responsibility for introducing change to rural communities. Rather than asking what technologies are most needed by a community, it would be better to ask why that technical knowledge has not yet reached them and where it could have come from. Change processes should be designed from a knowledge-systems perspective, working to help people find new information and to learn from it. It is more important to focus on the design of the process for mastering change and learning, than on the technical content of the particular innovation message or package.

▪ Asking 'what works?' is the wrong question

Because social context is different even in neighbouring communities, the same arrangements for working and learning will not work everywhere. Facilitating change and innovation requires

the ability to adapt ways of working to suit people's preferences. The question 'what works?' (or 'which are the best buys?') is less appropriately applied to intervention types and the substantive content of introduced changes, and should instead be focused on the best ways of working with people to help them find the changes that suit them. This cannot be done by expecting all communities to comply with the same rules for participation or demanding that frontline staff comply in applying the same design everywhere.

- **The importance of learning from experience**

The non-governmental organisation (NGO) has implemented a successful project, but they did not know which elements had been successful or why and how people had adapted messages to suit their own lives. This is because programme resources for visiting the communities and learning ended when the project closed. As a result, future programming had to be based on what appeared to be working at the time. Retrospective learning requires relatively small levels of resources and is hugely cost-effective. It should be standard practice.

While these traditional clay jars do not look like an innovation, villages had not previously maintained emergency stores of grain. This combination of a new adaptation of an existing culture of self help with an old storage technology has transformed their ability to look after each other in difficult circumstances. © Colette Benoudji



1. INTRODUCTION

1.1 The purpose of the research

As investments in climate change adaptation and climate resilience are increasing, it becomes more urgent to know how best to use the resources that are being made available from a range of different funding instruments. These investments are being directed with far more guesswork than may be realised. Theories of change that promise positive and lasting results remain largely assumptions about what will work, because almost all learning from interventions takes place only within the timeframe of the interventions' implementation, i.e. just as projects are closing. This is too early to see which changes take root, which are sustainable and truly adaptive and how people adapt new ideas to fit their own lives. Theories of change are unlikely ever to describe exactly what does happen after a project ends (or even before it). From a technical perspective, not everything that works in testing, on a pilot scale or in other places, will work for people everywhere. Social relations and forms of organisation will also determine how people behave and what happens to new ideas.

SPARC³ is contributing to filling this information gap by publishing a series of studies taking a retrospective look at projects around five years after they have finished to see what happened in subsequent years. The studies were all conducted in semi-arid areas in the Sahelian belt and in places where there are challenges with governance. Alongside this study of the introduction of climate-smart agriculture in eastern Chad, the studies looked at public works' assets for natural resource management in Kenya and Ethiopia (Levine et al., 2024), water, credit and livestock market interventions in Turkana, Kenya (Agol, 2025), and attempts to transform pastoralism through livestock market interventions in Ethiopia (Bedelian, 2025).

1.2 The project and its context

This report presents the lessons of a return visit to a project that had been completed five years earlier by Concern Worldwide. The project aimed to 'improve community resilience through climate smart agriculture, health, and early warning systems', financed through aid from the UK Government through its Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) programme. The programme was a cross-border programme implemented in Dar Sila region in the southeast of Chad and in West Darfur in Sudan from April 2015 to December 2017.

The project was wide-ranging, aiming to improve agricultural production, increase the resilience of agriculture to drought and climate change and improve nutrition through changed child feeding practices. It included interventions in water and sanitation and to promote gender equality.⁴ Not all of these components are discussed in this report (see below).

3 Supporting Pastoralism and Agriculture in Recurrent and Protracted Crises is an FCDO-funded research programme (www.sparc-knowledge.org).

4 For more details, see: www.braced.org/about/about-the-projects/project/?id=db586dc7-4407-444a-87c7-40f1f1768dd4.

Learning was drawn from interviews and group discussions in eight villages in the project area of Dar Sila region, meeting separately with men and with women, together with widespread observation of physical changes. The researchers were familiar with the project area at the beginning of the project and this familiarity gave them an informal baseline. Although everything possible was done to reduce pro-project bias in reporting, by carefully triangulating testimonies and by asking questions in very different ways, it was not entirely possible to rule this out. The research team was prevented from staying in villages in the evenings when informal conversations would have been possible because of insecurity in the area. As a consequence, there was a reliance on organised meetings, making the village leader a de facto gatekeeper of informants, and making it much harder to hear the perspective of those who had chosen not to be involved in project activities.



This is what a social revolution looks like. The men in the top image wait comfortably in the shade after their meeting. But the village women refused to start their meeting until the men gave up their place in the shade. The image at the bottom shows the women now comfortable in the shade, their smiles indicating their triumph at achieving gender equality.

© Colette Benoudji

2. SIX STORIES OF ATTEMPTED CHANGE

This report is not an evaluation of a resilience-building project, but draws lessons from the ways in which processes of change continued after the end of the project. This section of the report looks at six components of the project, each an example of an attempt to introduce change. These six stories do not represent everything accomplished by the project, nor have the stories been chosen to be 'fair' in the picture they give of the project. The stories were selected because they offer insights on themes that are of much wider relevance. It is only proper, then, to begin with our overall judgement that the project seems to have been well implemented; the relationship between the NGO and the villagers has been good; and the project overall has clearly had a positive impact in the area, including in areas not dealt with in this report. Nothing in the discussion of what happened after the project closed should detract from this appreciation of what was done, and nothing in the discussion of why some impacts were not sustained should detract from the overall impression that significant achievements were very much visible in the villages several years after the project had ended.

2.1 Agricultural extension for climate-smart agriculture

Under the label of 'climate-smart agriculture', the project aimed to promote a wide range of agricultural techniques that are widely practised, but not in the project area. This included: changed crop spacing; new crop varieties; biopesticides (especially the use of neem) on both crops and for post-harvest storage; bunds for soil and water conservation; mulching and composting; improved stoves to reduce deforestation; and grafting for fruit trees, which had never been deliberately propagated before.

According to the testimony of farmers, many of the techniques promoted continued to be practised,⁵ and reportedly with significant impact on crop yields. Farmers were selective about what they adopted, and, for example, the introduced varieties of maize and sorghum did not suit them. But, even in the dry season, the researchers noted the comparative absence of burning of crop residues compared with neighbouring villages; they confirmed the widespread presence in the local markets of varieties of pulses that had been introduced by the project; and, most visually strikingly, an increase in the number of fruit trees in both project and surrounding villages.

Women took pride in showing the researchers how they had learned to repair and rebuild the improved stoves that most households now used. The agency had expected women to prefer the stoves because they reduced firewood consumption. The more important changes from the villagers' perspective were that frequent house fires – two or three in each village every year – had almost entirely stopped, and they and their children no longer suffered from conjunctivitis.

⁵ On average, households were using three more of the promoted technologies in 2017 than they had been using before the project in 2012 (Leavy et al., 2018).

From an evaluation perspective, these are encouraging findings. They also raise two further questions of more general relevance: what difference the project made at an economic level for households; and regarding the need for an intervention by an external NGO.

The economic impact of the new technologies was hard to discern. Farmers variously reported to us increases in yield from 40% to 200%, but these are estimates based upon impression and recall, and probably further filtered through positive reporting bias. A working understanding of resilience has to be based on greater detail about how much different technologies will help, in order to know which technologies to promote⁶ (Levine, 2022). Detailed knowledge is needed of the portfolio of changes necessary for different people to be able to cope in different situations, e.g. whether investments in household and village-level changes towards climate-smart agriculture are enough on their own to achieve food security that is resilient to the likely future climate or whether complementary measures will also be needed.

More details are also needed to know which practices are worth promoting because they have a chance of being adopted. Yield differences are not sufficient to understand the net benefit of changes. The example of the promotion of biopesticides illustrates this point. Their efficacy is well known, but the time taken to prepare the pesticide from neem seeds meant that it was only ever used in places where commercial pesticides were not available. Time is often as much a limiting factor in people's lives as money or land and must be considered in thinking about the overall return on investment which largely determines whether farmers will continue to practise what they learn or whether others then copy it. These considerations are required to underpin a theory of change, regarding both uptake and spread and in achieving resilience.

Given that the project deliberately promoted technologies that were tried and tested, and already used on the continent, a more fundamental question is why an NGO intervention was needed at all to introduce these ideas. The common perception that farmers in remote parts of Africa are conservative or traditional and lack innovation is known to be generally false. There was clear evidence that it was not true in these villages either, because farmers spoke of going to great lengths for purposeful innovation. For example, some farmers told us of making trips into Sudan to bring back varieties of guava and of chickpeas that they had come across and preferred. The adoption outside the project villages of some of the introduced technologies also demonstrates an active flow of information and knowledge. Given these knowledge networks, how is it possible that farmers knew of guava varieties in Sudan, but had never heard (for example) of mulch or contour bunds for soil and water conservation? This would have been a question worth posing at the outset of the project. A good answer might have allowed the project to unlock the blockages in the knowledge and information systems. This would have facilitated the flow of innovations into the villages without the need for heavy investments in promoting tried-and-tested technologies village by village.

2.2 Groups for vegetable or market gardening

Vegetable gardening was promoted through the creation of women's groups, who were supported to work collectively and provided with various inputs and tools, such as pedal pumps and watering cans. Some villages had not been used to vegetable gardening, although the cultivation of onions, okra and peppers was already practised in others. The project introduced women to a range of different vegetable crops, largely those commonly eaten in

6 Such analysis is strikingly rare (Levine, 2022).

Europe (carrots, aubergines, lettuce, cabbage), as is common practice in aid programmes. Several years later, there were no groups in the villages that had continued to function as the project had imagined. This did not mean, though, that the project had completely failed: vegetable cultivation is now more widespread than previously. The mixed bag of successes and failures contains some commonplace lessons that should not need repeating, were the mistakes that illustrate them not so commonplace. There are also other lessons to draw that are less clear, but which offer scope for more interesting exploration.

The commonplace lessons include the reasons why some of what was introduced has simply fallen by the wayside. It is not a part of the world where people eat (or buy) salad or white cabbage, and these crops were quietly abandoned. Women struggled to use the pedal pumps, and spare parts were difficult to obtain when they broke down, so these too were abandoned. The desire to introduce pedal pumps and cabbage seeds is a symptom of something deep in the aid sector, and a difficulty in trying to help people on their own terms.

Some have since scaled back vegetable gardening and many fruit-tree nurseries closed, because vegetable prices in the local market fell as the practice of vegetable production spread, and because market demand for seedlings was too small once the project was no longer buying them. This illustrates the importance of knowing what happens when support is withdrawn. It is tempting to assume that supported successes, and successes at pilot scale, have continued. As a result, the opportunity to learn how best to help bring change is lost.

The social organisation that had been created by the project as a vehicle for promoting vegetable gardening was not a great success. The women's groups collapsed for many reasons. Collective working was sometimes abandoned simply because women preferred to work on their own rather than in groups, but this depended partly on individual preference and partly on the history of trust within each village. Most of us would recognise that, in our own societies, some like sharing tasks and social interaction in groups; others like the autonomy of private action; and many like a bit of each. The default decision to introduce vegetable gardening through women's groups regardless of people's preference and context (again, common in development projects) is a symptom of a what is perhaps a need to see a project rolling out uniformly across a geographic area, instead of engaging with difference and allowing people to work how they want.

Some groups broke up because of lack of trust, usually linked to the group leader(s) privatising benefits and assets, e.g. stealing the watering cans. This, too, is predictable. The only comment worth making may be to note the frequency with which such conflicts arise from the donation of material as an incentive to join the activity – equipment or material which people would normally expect to provide for themselves and which they would have to do for the activity to be sustainable and replicated. The social norms governing behaviour would surely be very different regarding watering cans that the women had bought or made for themselves. The groups were not necessary for horticulture though. Where they collapsed, many women used what they had learned and began private vegetable gardens.

A major constraint for growing vegetables in the dry season is that the gardens offer cattle a rare glimpse of green vegetation, and many disputes arose as a result. In some parts of Chad, agricultural expansion has encroached on traditional pathways for pastoral movement, creating conflicts, but this was not the situation in these villages. These were purely local disputes. Unattended cattle, usually from neighbouring villages, wandered in, causing damage. There were some attempts to exact compensation, but there is no recognised institutional

way of doing this. If an offending animal was captured, it was not always clear who owned the animal, and tracing the owner would take time and effort. Since no one knew what to do with the animal in the meantime, people simply had to let it go.

This too is not surprising, and this is why the story needs repeating. The problem with cattle was predictable, but precisely because it is so familiar, it may be viewed as a constraint that can only be controlled by expensive investments in fencing for the groups – a limited and unsustainable solution. This is to misdiagnose the problem. Vegetable gardens did not collapse because of cattle. They collapsed because of an institutional failure: communities' inability to establish and enforce rules that would help them to live their lives as they wanted. They lacked an institution to manage compensation claims between cattle owners and those who suffered damage from their animals.

Aid projects are happy to address water where it is a limiting factor to vegetable growing: a project could also help people to establish the institutions that they want to govern livestock and compensation claims. Such institutions don't, however, easily arise on their own, particularly because the disputes were intervillage, i.e. at a level where there were fewer and weaker social norms and no existing institution governing behaviour. Few individuals have the confidence to challenge their societies to address an institutional void such as regulations for livestock across villages. It is much harder when those trespassed against are women, since they have less such confidence and less voice, and the men who run local institutions are less likely to prioritise dealing with a problem that they do not feel. (While vegetable gardening is a female activity, cattle keeping is a male one.)

The project did not try to address this, again illustrating the need to know what happens in villages outside the project activities. More importantly, this also signals the need for external agencies to expand their vision of how far the domain of resilience-building extends, and the potential sphere of their activities far beyond the technical.

2.3 Community grain banks for an informal safety net

Community grain banks were established, to be run by community action committees. Grain banks are often set up as a village-level strategic grain reserve, to release grain at controlled prices in the lean season. Their popularity in development projects persists, despite the difficulties in setting them up and a high failure rate due to institutional challenges for communities of maintaining them. In this project, the primary function of grain banks was as a village-level safety net and they have succeeded well. They have continued to function without support, despite the severe test from floods in 2022. These floods caused widespread harvest failures (i.e. problems for the supply to grain banks) and widespread food shortage at household level (i.e. increased demands on the grain banks for assistance). Only one grain bank has failed, because people could not replenish the stock after the 2022 floods.

This success should not be taken for granted. Arguably, the most complex and risky institution has survived in the same villages where much simpler institutions have not. Gardening groups fell victim to the theft of watering cans, but much more valuable stores of grain have been managed without such problems. Unlike gardening groups, though, grain banks were valued by all the villages at an institutional level. This can be seen when they were challenged by the 2022 floods, after which harvests were insufficient to stock the granaries.

Villagers wanted to maintain the institutional safety net, so they contributed money to buy grain rather than donating from harvests. An idea has taken root in a society when people use it as they want, and not simply in accordance with the procedures that they were given.

The line between social or institutional and technical change is not that straightforward though. Community action committees and community grain banks appear to be an innovation in social organisation, but in some ways they succeeded because they were actually a technical innovation. Grain banks did not create an institutional informal safety net based on mutual solidarity: this was already deeply embedded in people's culture (strongly linked by them to their religion). Because community elders already had the role of organising such social welfare, community action committees were also not seen as a new institution by villagers. The innovation was in their organisation of assistance. Previously, community elders responded to idiosyncratic shocks, i.e. events such as a house fire which affected only one or two households. They responded to the needs of just a few people; assistance could be reactive, taking up collections after the event.

The innovation was to expand the vision of assistance. By setting aside resources in advance, villages could respond to shocks of a different nature, affecting up to 50 or even 100 households in the village at a time. People saw this as an improvement *on what they were already doing*. The stage at which projects often fail is when they have to 'hand over ownership'. Here, the village did not take over ownership of the grain bank, because it was always identified as a function which was their own and which was governed by their own moral code, which obliged all community members to contribute and which ensured that resources were dispersed in ways that were collectively accepted.

2.4 Creation of rural resource centres

In three villages where water was available, a more formal 'resource centre' was created as a place where technologies were tested, training took place and farmers could come to learn from demonstration plots showcasing innovations. None of these centres is still functioning as a learning centre, and the demonstration plots are being maintained in only one village. The proximate causes of failure are unsurprising: solar panels providing electricity were stolen; water sources broke down. If such were the only problems, there would be little new to learn.

Unlike the community action committees (above), the resource centre was an institution existing in isolation from the society into which it was transplanted. There was no reason for it to exist. Experimentation, learning and knowledge-sharing in agriculture were all common, but without any institution for managing these activities. Learning was not culturally a collective process: collective learning consisted of learning by individual households that was then widely shared. There was no less agricultural change in villages without the centres: ideas spread and were shared if they were found useful. The drivers for creating a formal resource centre lie in the aid sector itself,⁷ not in any analysis of the local agricultural knowledge system.⁸ Aid incentives are to invest in what is highly visible: this can be self-defeating, because changes are

7 Aid projects commonly fall into the trap of focusing on what they can control (a well-managed 'centre', rather than farmers talking to each other). To check which other traps the resource centres fell into, see Levine and Pain (2024).

8 The study of how agricultural information is generated and shared is around 40 years old (see for example Röling (1988), an early advocate of the knowledge-system perspective) but still seems not to have permeated well into aid thinking.

visible precisely when they don't fit with the local society. (A rough rule of thumb might be to avoid anything written with initial capital letters.)

Villagers raised two other criticisms of the resource centres, both of which deserve mention. Women complained that they were largely shut out of the running of the centres, because the project offered incentives and motivation for people to participate. The offer of a free lunch ensured that men kept participation to themselves, even though agricultural technical practices were of more interest to women, since they undertook most of the work. Incentives designed to encourage participation only undermined it.

People also complained about the way the institution was supported. The centres' committees were taught to keep accounts so that they had could fulfil their functions. The rest of the villagers were not, leaving them unable to hold the committee to account. Aid programming often sees 'capacity-building' as training for individuals, in the belief that the limiting factor of institutional performance is limited individual competence. It rarely is. Here the centres' accountability to the community was a key dimension of institutional performance, which required the focus of attention to be with the community, not the committee.

2.5 Women's life skills training and gender dimensions of resilience

Alongside the various economic activities, the NGO also ran what it called 'life skills training' for women (*compétences de vie des femmes*), aiming for women's empowerment both domestically and at community level.

The impacts at household level of this work on gender relations are difficult to determine because it is not easy to interpret what people say about it. However, in the public sphere there were changes in behaviour that were hardly believed by the researchers who had known these communities from the beginning of the project. One change was in their physical appearance: women appeared healthier, they had looked after themselves better and they were much more energetic, with a brightness in their eyes that had been lacking.⁹ In open meetings discussing the agricultural technologies taught, women constantly corrected the men, because they had paid more attention as the ones responsible for most of the farming work. Then, in one village, women demanded that the men vacate the space in the shade where they (the men) had been interviewed before agreeing to have their (women's) discussion. This was a huge change in public behaviour, and a powerful indicator of an increase in confidence and in women's ability to act collectively and have a voice.

Resilience is about more than assets, income and crops that are adapted to climate change – although these help people withstand the vagaries of life, they are also vulnerable to them. How people cope in the difficult times when assets and income are lost depends on intangible qualities such as personal confidence, mutual trust (for collective agency) and the performance of institutions. Even if agencies recognise their centrality, these are difficult to capture in monitoring frameworks. The project attempted directly to support some of these dimensions in its gender work but probably missed opportunities to make it more central in everything that it did. Women's changed behaviour was evidence that in some ways at least they had become more resilient.

⁹ This may be both a physical and psychological change. Women reported a huge reduction in eye problems (conjunctivitis) as a result of the improved stoves.



Transformed women: the confidence and appearance of the women in the meetings surprised the researchers, who had worked in the same villages before the project. © Colette Benoudji

2.6 Early-warning committees

The project tried to create village-level early-warning committees, linking these to state meteorological services to provide villagers with advance warning of floods, for example. These never worked once the project finished. A local radio station closed, the state meteorological services never provided villages with locally adapted information, and the committees had no real purpose at village level. There were no clear recommendations that could be made to villagers even in the event of a warning such as the likelihood of floods, beyond advising people to refrain from cultivating in marshy lowlands.

This was always likely to be an impossible institutional change.¹⁰ Many changes had to take place at the same time for it to work. State services had to work in a way that they had never done; state services had to link with village-level institutions – a profound cultural and institutional change; and a new village institution had to take on a function that had never really existed before.

Lessons here are not about the reasons for predictable failure of this component, but about why a project ever thought it was a realistic way forward. External projects so often want to create ideal elements from their vision of how a society ought to be, without considering the technical, institutional, social and economic realities of the starting point, and without a well-thought-out pathway by which change could take place and take root.¹¹ That is not a realistic basis for planning.

¹⁰ There may have been a degree of wishful thinking about the state of Chad's meteorological services and their ability to provide accurate and up-to-date information (Laville et al., 2024).

¹¹ Levine and Pain (2024) identified this as the first trap in their list of 10 that agencies commonly fall into, preventing their work from being relevant to the context in which they are working.

3. CONCLUSIONS: WHAT THE STORIES TELL US ABOUT RESILIENCE-BUILDING

3.1 The importance of ‘the adjacent possible’

In analysing how transformational change can occur in evolution, Kauffman (1996) argued that the possibilities of change for any organism at any point in time are limited by where and what they are: what he called the ‘adjacent possible’ describes the set of possibilities that are within reach from a given starting point. Every evolutionary change moves the starting point, opening new possibilities for change, but closing others (the idea of ‘path dependency’). Transformation can happen only step by step, and steps can happen only when the conditions are ready for them. This is a useful way of thinking about change in a developmental sense. There is a tendency to seek to build resilience by choosing the desired innovations (the end state) and then trying to transplant those innovations into a society, but without paying enough attention to the evolutionary pathway needed. It is more useful to start at the beginning,¹² with where a society is now, and then to think about how it could evolve into one where a particular change has taken place.

The experiences of the NGO project in eastern Chad suggest that societies (or communities) make changes which are close enough to where they are, but that a leap to something very different may be impossible, and particularly when that requires several changes to happen at the same time. Such changes may be technical, social, psychological: collectively, they may put the evolutionary leap, or the ability for a transplant to take root, beyond what is adjacent and possible.

Many of the introduced technical innovations in agriculture proved to be adjacent, others not. People always liked eating fruit and they knew how to propagate plants – propagating fruit trees was new, but it did not demand any cultural, psychological or social changes or new ways of working together. It spread rapidly. Other introduced agricultural techniques were not adjacent. There was no cultural practice of eating salads, and little incentive for people to change their diets just to use produce from a way of farming that they had never practised. Lettuce cultivation did not spread.

The same is true at an institutional or social level. Community grain banks were adjacent to the existing culture of collective support for people who had encountered misfortune, and so increasing the scale of their functioning with pre-positioned resources was easily achieved. Institutional collective learning was not adjacent to where they were, and their moral economy had less clear rules about how to handle new kinds of resources donated by outsiders to new kinds of institutions, and how to hold people to account for abuse of any rules. To maintain such new resources required so many changes to take place at once, from the technical knowledge to maintain water pumps to adopting new ways of learning as a collective process,

12 An idea closely associated with Hammerstein (1960).

to developing social rules for holding the managers of new, formal institutions to account. Resource centres were neither adjacent nor possible – at least, at the time, because each change since then may reduce the size of the ‘evolutionary gap’ needed.

A theory of change ought, of course, to analyse the evolutionary gap and how it can be bridged (even if that language is not commonly used). An analysis of whether a change is likely to be sufficiently adjacent or how to make it more adjacent should – and could – be the first step in planning and designing interventions. It cannot be known in advance where the limits of adjacent possibilities lie, but much can be done to make desired changes closer and thus more accessible. Instead of introducing an innovation using models from a standard international template, it is better to invest in understanding what similar functions may already exist in the local culture, and how a new idea could be incorporated into these.

Several of the innovations introduced included both social and technical elements. Sometimes, the two at once was a step too far, but in some cases the social survived, in others the technical messages did. After the project closed, people chose how to reduce evolutionary distances for themselves, e.g. abandoning groups but continuing to farm (some) vegetables. It may be more helpful to let them do this while support is still available. Creating a new organisation or a committee for people is not the same as creating a new social relationship. The difference between the two can easily be felt, but it does not emerge easily from a set of tick boxes or a theory of change reduced to a single flow chart.

3.2 Confidence, trust and institutions

Once the external agency’s support was discontinued, three elements were seen to be critical for the longer-term sustainability of what was introduced and for people’s ability to continue to improve their own lives: confidence, trust and functioning institutions.

Confidence is a large determinant of agency at an individual level, and it is easy to underestimate the need for confidence in seeking change of any kind. Not everyone is comfortable with doing something they have never done before (or seen others doing). Even harder can be having the confidence to get other people to do things differently, e.g. holding committees to account, dealing with others in groups or finding ways to defend your rights over your land from negligent cattle keepers. The level of confidence needed can be a barrier to action, and it is important to reduce this threshold. *Every* theory of change should consider whether the confidence threshold is likely to be too high and how it can be lowered, and how, over time, confidence can be built.

Trust between people is a prerequisite for collective action. It was generally high in the project area in eastern Chad, but still varied from village to village, and between different people. Some forms of organisation demand greater trust, and because there are social norms for behaviour in different domains, so trust may be more evident in some areas (e.g. people contributing to care for those in need) than in others (treating items donated by a foreign agency as a public good). Trust can be built, but it is surely wise to find ways for people to work together that demand less initial trust. Since levels of trust vary between villages and individuals, village-level implementation has to allow for discretion on how to help people to work together.

Working together does not always need an institution, but an institution may be required where a permanent function is needed or when cooperation has to go beyond those who have a direct social relationship, e.g. negotiations between herders and crop farmers in different villages. Projects can make two mistakes about institutions: they may fail to see the institutional dimensions needed for change; or they may try to institutionalise what does not need to be institutionalised.

Committees are easy to establish, but real institutions are difficult to create from scratch. Where they are needed to fulfil some function, it is likely that similar functions have already been required and that arrangements for them already exist. There is therefore likely to be a high rate of return on investment in understanding this kind of institutional landscape before rushing to set up new committees or institutions. That landscape might not have anything that looks like an institution, so questions need to be about the functions: how do communities make decisions that affect everyone? What are the processes, the people involved, the rules? How do people institute action that has to be taken collectively? This framing will help in avoiding the leap from 'community institution' to 'village (male) elders'.¹³

Where no such institution exists, as with the example of an intervillage dispute resolution mechanism, it is worth exploring how this could emerge from what does already exist. If this is not feasible and nothing can be done, then this must be recognised as an institutional limitation on what interventions can succeed (e.g. dry-season gardening), just as a technical barrier (e.g. lack of water) would be.

Changes may not need new institutions and creating them may impose greater social costs and thus make them less sustainable, as was seen from the training centres. Projects like a visible sign of lasting impact – a training centre with a committee is a clear output – but institutionalising changes that do not need institutions, for example, where they compete with existing functions or where they make life harder for villagers, can be a sufficient reason for their failure. Learning does not need a training centre, but if one is established and then collapses, learning might suffer.

3.3 The continuing relevance of knowledge systems

Knowledge systems have been an object of study for decades but for some reason remain foreign to much aid practice. This project was a conscious response to weaknesses in the agricultural knowledge system, in that it promoted common practices that had not permeated into villages in the project area. However, it did not take a knowledge systems approach. Had it done so, the project might have asked why these ideas were not known and how barriers to the flow of new ideas could be addressed. Instead, the project adopted the default position of aid agencies, putting itself – temporarily – at the centre of the system, as both the arbiter of what information is appropriate to people, and the direct provider of such information to farmers in recommended packages.

¹³ Local institutions should not be idealised. It is also necessary to understand who is excluded from decision-making, who has a voice and who is marginalised by the current ways of working.

As a result, once the agency, the sole provider of new ideas, had left, we found few further external agricultural innovations in the project villages. Villages had not been left better networked into continuing streams of new ideas. Focusing on what projects can directly control, such as the provision of ideas that they select as appropriate, inevitably limits the impact of a resilience project, since it neglects improvements in a future stream of ideas. The appropriateness of introduced technologies will always tend to decrease over time, because inevitable changes in circumstances (such as climate, land availability and market prices) mean that what is appropriate this year will be less appropriate in the future. Current approaches to innovation mean that any improvements in resilience are likely to have a short lifespan.

3.4 Asking the question 'what works?'

The question to which everyone seems to be seeking the answer is 'which intervention types *work*?' It is an obvious question, but this study reinforces how far it is the wrong one. There was no answer to 'what works?' because different components of the project worked in different villages. None of the project components failed because they were obviously 'wrong': in some villages, for different reasons, things didn't come together. The project's successes are because, in many cases, people could still take up the ideas that were of use to them and leave the rest.

Working with women in groups is neither good nor bad: sometimes it will work, depending on the society, the individuals and the ways in which the groups are created and supported. This is not about chance: it means that interventions need to understand how things are playing out and give those managing their implementation on the ground the freedom, or the discretion, to adapt to what will work best in that place with those people. Some proposed changes failed because they were beyond 'the adjacent possible'. What works, in other words, depends not only on the proposed 'solution' itself, but on its distance from the current situation.

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Cover: The group of women confidently awaiting the start of the focus group (Gozbeida, Dar Sila). Image by Colette Benoudji

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