Strengthening Rural Resilience in India

A framework for mainstreaming ERADA's outputs for building long term resilience in rural India

Enhancing Rural Resilience through Appropriate Development Actions (ERADA)
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## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acronyms</td>
<td>04</td>
</tr>
<tr>
<td>Introduction</td>
<td>05</td>
</tr>
<tr>
<td>Introducing and Defining Rural Resilience</td>
<td>07</td>
</tr>
<tr>
<td>Unpacking Resilience</td>
<td>09</td>
</tr>
<tr>
<td>Using the Resilience Capacities Approach</td>
<td>13</td>
</tr>
<tr>
<td>Measuring Resilience</td>
<td>16</td>
</tr>
<tr>
<td>Appraising Impact of Mahatma Gandhi NREGA on Resilience</td>
<td>18</td>
</tr>
<tr>
<td>Creating a Framework for Rural Resilience</td>
<td>21</td>
</tr>
<tr>
<td>Measuring Resilience Outcomes – Future Challenges</td>
<td>25</td>
</tr>
<tr>
<td>Appendix 1: Interventions Types to Enhance Different Resilience Capacities</td>
<td>27</td>
</tr>
<tr>
<td>Bibliography</td>
<td>29</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>-----------</td>
<td>------------------------------------------------------------------</td>
</tr>
<tr>
<td>BRACED</td>
<td>Building Resilience and Adaptation to Climate Extremes and Disasters</td>
</tr>
<tr>
<td>BMZ</td>
<td>German Federal Ministry for Economic Cooperation and Development</td>
</tr>
<tr>
<td>CRD</td>
<td>Climate Resilient Development</td>
</tr>
<tr>
<td>ERADA</td>
<td>Enhancing Rural Resilience through Appropriate Development Actions</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organisation</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographic Information System</td>
</tr>
<tr>
<td>GIZ</td>
<td>Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH</td>
</tr>
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<td>IIED</td>
<td>International Institute for Environment and Development</td>
</tr>
<tr>
<td>IPCC</td>
<td>Intergovernmental Panel on Climate Change</td>
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<td>LNOB</td>
<td>Leave No One Behind</td>
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<tr>
<td>MGNREGA</td>
<td>Mahatma Gandhi National Rural Employment Guarantee Act</td>
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<td>MGNREGS</td>
<td>Mahatma Gandhi National Rural Employment Guarantee Scheme</td>
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<td>MoRD</td>
<td>Ministry of Rural Development</td>
</tr>
<tr>
<td>NRM</td>
<td>Natural Resource Management</td>
</tr>
<tr>
<td>PRIME</td>
<td>Pastoralist Areas Resilience Improvement and Market Expansion</td>
</tr>
<tr>
<td>RIMA</td>
<td>Resilience Index Measurement and Analysis</td>
</tr>
<tr>
<td>TANGO</td>
<td>Technical Assistance to NGOs</td>
</tr>
<tr>
<td>UNDRR</td>
<td>United Nations Office for Disaster Risk Reduction</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
</tbody>
</table>
Introduction
The paper ‘Strengthening Rural Resilience in India: A framework for mainstreaming ERADA’s outputs for building long term resilience in rural India’ outlines a framework for mainstreaming the Enhancing Rural Resilience through Appropriate Development Actions (ERADA) project outputs for building long term resilience in rural India. ERADA is an Indo-German development cooperation project commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ). The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, India is implementing the project in partnership with Ministry of Rural Development (MoRD), Government of India (GoI). The goal of the ERADA project is to strengthen the livelihoods of vulnerable households based on locally available natural resources and developmental support programmes.

The project has three components:

**Improving wage work potential of vulnerable households and enhancing the natural resource base**

**Long-term green livelihood development, in convergence with National Rural Livelihoods Mission (NRLM) and other relevant national and state level programmes**

**Improving convergence and strengthening of multi-stakeholder platforms for providing better access to vulnerable households**

**ERADA project is operational at a national level, and implemented in four Indian states, namely, Bihar, Jharkhand, Madhya Pradesh and Rajasthan.**

The paper draws on existing global and Indian literature, to provide an introduction and definition of rural resilience that is appropriate for the ERADA project context. It locates the ERADA project outputs under the broader resilience discourse and sets out a rural resilience framework which will be further developed as a universal framework for scale-up with the government and other partners during the project phase.

This paper is based on a series of key informant interviews and a literature review, drawing conceptually on the seminal literature relating on resilience, notably Bahadur et al, 2010, Béné et al, 2012 and 2014, and Agarwal et al, 2019.
Introducing and Defining Rural Resilience
The term resilience was first adopted in the 1960s, and has since entered the development discourse, becoming particularly prominent within the debate on Climate Resilient Development since the Paris Climate Accords of 2015.

Resilience has a wide range of meanings in development literature, and often refers to ‘bouncing back and returning to a previous state after a disturbance’, including not only ‘the ability to maintain essential function, identity and structure, but also the capacity for transformation’ (IPCC, 2022). This brief will adopt as a starting point for this paper, the definitions of resilience adopted by the IPCC, which gave a general definition in 2012, and a more detailed definition including climate change, that is particularly relevant for the ERADA project, in 2022:

‘The ability of a system and its component parts to anticipate, absorb, accommodate, or recover from the effects of a hazardous event in a timely and efficient manner’ (IPCC, 2012)

‘The capacity of social, economic and ecosystems to cope with a hazardous event or trend or disturbance, responding or reorganising in ways that maintain their essential function, identity and structure as well as biodiversity in case of ecosystems while also maintaining the capacity for adaptation, learning and transformation. Resilience is a positive attribute when it maintains such a capacity for adaptation, learning, and/or transformation.’ (IPCC, 2022)

In this way resilience refers to the ability of social-ecological systems to adapt, in anticipation or response, to changes. There are multiple dimensions of resilience, of which social, economic, and ecosystems are key. Resilience has been identified as a critical component of Climate Resilient Development (IPCC, 2022) and is enabled when;

‘Governments, civil society and the private sector make inclusive development choices that prioritise risk reduction, equity and justice, and when decision-making processes, finance and actions are integrated across governance levels, sectors and timescales.’

‘Partnerships with traditionally marginalised groups, including women, youth, Indigenous Peoples, local communities and ethnic minorities (high confidence). These partnerships are most effective when supported by enabling political leadership, institutions, resources, including finance, as well as climate services, information and decision support tools.’

Attempting to enhance resilience is however complex, particularly in areas with persistent development gaps and limited resources, as there may be trade-offs and competing priorities between mitigation, adaptation, and development, all of which are relevant to resilience.

There is not a shared universal understanding of resilience as a concept or development strategy:

‘Resilience is an entry point commonly used, although under a wide spectrum of meanings’ and it overlaps with concepts of vulnerability, adaptive capacity, and risk, and strategies for risk management, adaptation, and transformation (IPCC, 2022).

While it lacks a formal technical definition and is not discrete from the range of strategies that are invoked to achieve it, resilience is widely used as an integrating concept and brings together practitioners and policy makers from different disciplines to promote inter-sectoral and integrated approaches and promote a shared discourse1 functioning as a policy narrative, rather than a tightly defined technical concept.2 For the purpose of this paper it is useful to start by identifying some of the key characteristics of resilience which are relevant to the ERADA project, namely; it may be broadly defined as the ability to resist, recover from or adapt to the effects of a shock or change,3 it operates across multiple levels, including individuals, households and social and natural systems,4 and in most cases it refers to the response to a broad combination of entangled changes, rather than a single shock or stressor.5

Resilience has a wide range of meanings in development literature, and often refers to ‘bouncing back and returning to a previous state after a disturbance’, including not only ‘the ability to maintain essential function, identity and structure, but also the capacity for transformation’ (IPCC, 2022).

\[1\] Martin-Breen and Andreies, 2012
\[2\] Bene et al, 2014
\[3\] Mitchell and Harris, 2012
\[4\] Agarwal et al, 2014
\[5\] Levine et al, 2011
Unpacking Resilience
Resilience refers to the ability to respond to changing circumstances and is not necessarily an end in itself, but can be considered an enabler of the achievement of other development outcomes, such as nutritional improvements or poverty reduction. It may be characterised in terms of the extent to which actors (individuals or communities) possess a set of capacities which they can mobilise in response to a shock or stressor, to mitigate its adverse impact on well-being, as illustrated in Figure 1.

These capacities may be grouped into three key dimensions: absorptive coping capacity, which refers to the persistence of existing norms and processes; adaptive capacity, which refers to incremental adjustment; and transformative capacity, which refers to more fundamental systemic or structural changes, and may be characterised thus:

- **Absorptive capacity** – A system’s ability to maintain its original structure or functioning by absorbing infrequent and low-magnitude risks, either by anticipating or responding to a shock. This relates to the ability of households and communities to minimise exposure to shocks if possible and to recover quickly after exposure.

- **Adaptive capacity** – A system’s ability to make small adjustments to its existing risk management strategies, improving its original structure or functioning in anticipation of future risks. This relates to the ability of households and communities to make active and informed choices about their lives and their diversified livelihood strategies based on changing conditions. Adaptive capacity is enabled by access to five key resources: assets; economic, social and institutional stability; social capital; access to resources and entitlements; and power.

- **Transformative capacity** – A system’s ability to fundamentally change in its structure or functioning and adopt new strategies to move beyond vulnerability thresholds. This relates to system-level changes that ensure sustained resilience, including governance mechanisms, policies, cultural norms, and psychosocial factors informing people’s aspirations and confidence to adapt, as well as formal safety nets, access to markets, infrastructure, and basic services.

Resilience is driven by capacity across all three of these dimensions (absorptive, adaptive and transformative) which are interdependent. As such interventions need to support synergies between them, rather than prioritising one to the detriment of the others or assuming that resilience is linear, particularly given the fact that multiple shocks and stressors often occur simultaneously, affecting systems with varying intensities, at different scales, and in different ways, as discussed in Box 3 below.

**Box 3: The Interdependence of Absorptive, Adaptive and Transformative Capacity**

A system is more likely to absorb a low-intensity shock, but when a stressor exceeds absorptive capacity, the system will respond by drawing on its adaptive capacity to make incremental adjustments to its core structure or functioning. Eventually, the magnitude of an impact will overwhelm adaptive capacity, requiring more drastic change in the system’s structure or functioning. In that case, changes are not incremental any longer. They are transformative, resulting in alterations in the individual or community’s primary structures and functions. These transformational changes (sometimes deliberate, sometimes imposed) involve shifts in the nature of the system, such as when a household adopts a new direction in making a living or when a region moves from an agrarian to a resource extraction economy. The main challenges associated with transformation are not only technical or technological but may also include institutional reforms, behavioural shifts and cultural changes.

The kind of interventions which have the potential to contribute to resilience across these three capacity domains are illustrated in Figure 2, drawn from the TANGO Resilience Capacity Measurement Framework. 

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*Bene et al., 2012; Agarwal et al., 2019; Vaughan, 2018; Tango, n.d. REF TO BE COMPLETED

*A more detailed list of potential interventions relating to each capacity level is set out in Appendix 1.*
Building resilience across these capacity dimensions can diminish risk in two ways; by reducing exposure to hazards, on the one hand, and by reducing vulnerability, by limiting susceptibility, and enhancing coping and adaptive capacities, as illustrated in Figure 3.

Building resilience across these capacity dimensions can diminish risk in two ways; by reducing exposure to hazards, on the one hand, and by reducing vulnerability, by limiting susceptibility, and enhancing coping and adaptive capacities, as illustrated in Figure 3.

Hence, risk reduction to enhance resilience can be achieved by *ex ante* interventions to enhance capacity prior to the experience of shocks and stressors and also *ex-post* by interventions which support recovery.
It is important to note, however, that resilience in terms of successful absorption or adaptation in response to shocks and stressors is not necessarily positive. The persistence of existing systems may entail reinforcing structural exploitation and inequality, the suppression of innovation and change, or the accommodation of deteriorating social or economic conditions. At the household level for example, shocks may be absorbed by reducing the number of meals per day or withdrawing children from school, indicating forms of resilience which are detrimental to well-being. Similarly, maladaptation may result in outcomes which are harmful to welfare and sustainability.

It is also relevant to note that there may be complex distributional dimensions of resilience outcomes, as issues of power and agency determine the extent to which different actors in systems benefit in absorptive, adaptive and transformative scenarios, as well as the extent to which building resilience serves to reduce poverty.

The persistence of existing systems may entail reinforcing structural exploitation and inequality, the suppression of innovation and change, or the accommodation of deteriorating social or economic conditions.

Building resilience across these capacity dimensions can diminish risk, by carrying out interventions that reduce both exposure to hazards, as well as vulnerability, by limiting susceptibility, and enhancing coping and adaptive capacities, as illustrated in Figure 3.

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9 Leach, 2008; Bene et al, 2012
Using the Resilience Capacities Approach
The three part resilient capacity approach has been widely adopted in development projects addressing resilience in recent years to inform programme design and appraisal, as illustrated in relation to the Pastoralist Areas Resilience Improvement and Market Expansion (PRIME) programme in Ethiopia, funded by USAID, and the DFID funded Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) programme, described in Boxes 1 and 2 below.

**Box 1: Interventions to Promote Resilience Capacities in the PRIME Programme in Ethiopia**

<table>
<thead>
<tr>
<th>Absorptive</th>
<th>Adaptive</th>
<th>Transformative</th>
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<tbody>
<tr>
<td>Informal Safety Nets, including Credit or micro-finance group, Saving group, Zakat, Mutual help group (including burial societies), Civic (“improving community”) group, Charitable group (“helping others”) Religious group Women’s group</td>
<td>Livelihood diversity, including crop production, livestock production, wage labor, salaried work, sale of bush products, own business, land rental, remittances, gifts/inheritance, other</td>
<td>Basic services, including a primary school or within 5 km, a health center within 5 km, veterinary services within 5 km, agricultural extension services, institutions where people can borrow money, security services that can reach the community within 1 hour.</td>
</tr>
<tr>
<td>Asset Ownership, including consumer durables, agricultural productive assets, livestock</td>
<td>Human Capital, including basic literacy, primary or higher education, number of trainings received</td>
<td>Formal safety nets, including institutional food assistance, housing or non-food items, assistance for lost livestock, NGO disaster response assistance</td>
</tr>
<tr>
<td>Hazard insurance availability</td>
<td>Financial service availability</td>
<td>Access to infrastructure, including piped water, electricity, telecommunications, paved roads</td>
</tr>
<tr>
<td>Perceived ability to recover</td>
<td>Exposure to information</td>
<td>Number of livestock services</td>
</tr>
<tr>
<td>Local shock preparedness structure in place</td>
<td>Asset Ownership, including consumer durables, agricultural productive assets, livestock</td>
<td>Access to communal natural resources, including grazing land, water sources for livestock, community forest</td>
</tr>
<tr>
<td>Household savings</td>
<td>Aspiration and confidence to adapt</td>
<td>Access to market, including livestock, agricultural products, and inputs</td>
</tr>
<tr>
<td>Bonding Social Capital</td>
<td>Bridging social capital</td>
<td>Bridging social capital</td>
</tr>
<tr>
<td>Linking social capital</td>
<td>Linking social capital</td>
<td>Linking social capital</td>
</tr>
</tbody>
</table>

Source: Vaughan, 2018
Individual and household resilience capacities had successfully been built, with access to financial services and market development playing a key role.

While building the capacities of women had the potential to improve their status, it had not led to transformational change.

The project targeted marginalised people but some remained excluded and the reason for this was not clear.

Developing and strengthening institutions for climate information has great potential to build resilience, but this takes time.

Measuring Resilience
There is no agreed set of indicators which allow resilience to be measured and the impact of interventions to enhance resilience to be readily benchmarked (Bene et al, 2014). This is largely due to the absence of a set definition of resilience (as a process, strategy or outcome) and its intersectoral nature, which is dependent on the simultaneous implementation of a range of development strategies to promote change across the three sets of capacities. As such, the measurement of the performance of interventions to build resilience is often dependent on indicators from different sectoral interventions and discourses, including for example food security, household income or participatory governance. These serve as a proxy for progress against ‘resilience’ and are linked to the particular aspects of resilience capacity which the programme is attempting to address.

Multiple agencies have attempted to develop approaches for measuring resilience, each responding to the aspects of resilience of particular relevance to their institutional mandate. These include the United Nations Office for Disaster Risk Reduction (UNDRR) People’s Resilience Framework\textsuperscript{10} which focuses on sustainable development and disaster risk reduction,\textsuperscript{11} the World Bank’s Resilience Rating System,\textsuperscript{12} which focuses on building and tracking resilience to climate change, the FAO’s Resilience Index Measurement and Analysis (RIMA) approach,\textsuperscript{13} and USAID’s Resilience Measurement Framework.\textsuperscript{14}

While these approaches vary in detail, five key questions have been identified as central to resilience assessment, monitoring and evaluation to enable an in-depth understanding of the complex context and the factors that help individuals, households and communities manage and adapt to risk:\textsuperscript{15}

\textbf{Resilience for Whom?}  
The target populations and their attributes that include location (urban, peri-urban, rural), demographic factors (sex, age, ethnicity) and livelihood (agriculture, trade, unskilled labor).

\textbf{Resilience of What?}  
The enabling environment, including formal and informal institutions, infrastructure, social, ecological and economic factors that impact the target population’s ability to anticipate, absorb and adapt to risks.

\textbf{Resilience to What?}  
The complex and compounding shocks and stresses that impact people’s capacities to achieve development outcomes.

\textbf{Resilience Through What?}  
The absorptive, adaptive and transformative capacities that strengthen the ability of target populations to mitigate risk.

\textbf{Resilience to What End?}  
The primary well-being or development outcomes for which we want to build resilience.

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\textsuperscript{10}Reschler,2013.  
\textsuperscript{11}World Bank Group, 2021.  
\textsuperscript{12}FAO, n.d.  
\textsuperscript{13}Henly-Shephard and Sagara, 2018  
\textsuperscript{14}Mercy Corps (n.d.) cited in Henly-Shephard and Sagara, 2018  
\textsuperscript{15}Mercy Corps (n.d.) cited in Henly-Shephard and Sagara, 2018
Appraising Impact of Mahatma Gandhi NREGA on Resilience
Having discussed the key conceptual issues relating to resilience, we now move on to consider resilience in relation to the Mahatma Gandhi National Rural Employment Guarantee Scheme (Mahatma Gandhi NREGS), the central scheme under the partner ministry of the ERADA project.

The Indian Mahatma Gandhi National Rural Employment Guarantee Act Mahatma Gandhi NREGA was passed in September 2005 with the objective of addressing the statutory right to food security by making rural workers eligible for up to 100 days of work on demand. Implementation began in 2006 in the poorest 200 districts and was extended to all remaining rural districts in 2008. It is currently the largest rural development programme in India with an annual budget allocation of USD 9.6 billion in 2022.16 Mahatma Gandhi NREGA is operational in 34 out of the 36 states and Union Territories, and 691 of the 712 districts17 and is the largest public employment programme in the world, employing 150 million people and creating 3.1 billion workdays in 2021/22.18,320 million workers are currently registered in the scheme and almost 40% of homes in India received benefits under the scheme over the last five years 2020.19 The Mahatma Gandhi NREGS is a central Government initiative under the Ministry of Rural Development (MoRD), Government of India, and responsibility for implementation is shared between national and state governments.

The key vectors of the Mahatma Gandhi NREGA which contribute to resilience are common across all public employment programmes, and have been identified as shown below:20

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17 McCord and Paul, 2019
18 https://nrega.nic.in/Nregahome/MGNREGA_new/Nrega_home.aspx
20 See Devereux and Solomon, 2006.
Each of these vectors has the potential to strengthen the range of livelihoods resources to which communities have access and which are central to resilience capacity. These resources have been characterised as range of different types of capital: natural resources and healthy ecosystems, privately-owned funds and assets, education, skills, training, health, knowledge and motivation, relationships, networks, institutions, built and community infrastructure. By enhancing these livelihoods capitals, Mahatma Gandhi NREGA contributes to the development of resilience pathways which build absorptive, adaptive and transformative capacity (Kaur et al, 2019). The way that the programme contributes across each of the five livelihood capitals and the associated pathways to enhanced resilience capacity is summarised in Figure 4.

Figure 4: Framework for rural resilience in ERADA: Mapping outputs into pathways to resilience

Creating a Framework for Rural Resilience
The ERADA project is designed to support the impact of the *Mahatma Gandhi NREGA* by promoting the capacity of households to absorb the effects of climate risks, adapt to climate impacts and transform their livelihood strategies to address growing climate stresses. It seeks to achieve these outcomes by

i) Increasing *Mahatma Gandhi NREGA* performance in terms of effectiveness and efficiency by enhancing implementation modalities and performance, and

ii) Promoting policy convergence by aligning policies in terms of their objectives and instruments, so that different policy areas are coherent and reinforce each other, as described in Figure 5.

The objective of the ERADA project is to strengthen the livelihoods of vulnerable households based on locally available natural resources and developmental support programmes.

**Output 1**

Improving wage work potential of vulnerable households and enhancing the natural resource base

**Output 2**

Long-term green livelihood development, in convergence with NRLM and other relevant national and state level programmes

**Output 3**

Improving convergence and strengthening of multi-stakeholder platforms for providing better access to vulnerable households

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Short-term income generation providing immediate relief, and strengthening NRM asset base

Medium and long-term income generation through integrated livelihood development in convergence with NRLM and other programmes

Institutionalising convergence and sustainable solutions

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Figure 5: ERADA’s outputs in the context of strengthening rural resilience in India

By improving implementation and enhancing convergence ERADA has the potential to contribute directly to the different forms of resilience outlined above and the five livelihoods capitals which drive resilience outcomes. Key resilience aspects of ERADA are the promotion of:

- Climate resilient livelihoods
- Sustainable natural resource use and management
- Green recovery
- Targeting women, youth, migrant labourers, scheduled caste (SC) and scheduled tribes (ST) (also known as ‘leave no one behind’ or LNOB)
- Agroecological approaches for NRM based livelihoods

The ERADA resilience framework needs to capture the resilience impacts of these interventions across the four key vectors through which Mahatma Gandhi NREGA functions (the wage, creation of infrastructure, skills development and institutional strengthening). This can be achieved by identifying and appraise the extent to which these interventions create pathways out of poverty through increased resilience.

The way that ERADA will contribute through these vectors to achieve resilience outcomes by enhancing household income, may be illustrated by combining the resilience capacity and livelihoods capital approaches outlined above, with the ‘Hanging in, Stepping up and Stepping Out framework’. The resulting simple schema accommodates a dynamic understanding of poverty, livelihoods, and the multiple shocks and stressors to which the poor are exposed.

It illustrates how ERADA has the potential to focus on those who are left behind and enhance their adaptive capacity by increasing household income, see Figure 7.

The integration of ERADA outputs into a pathway to resilience framework is illustrated in Figure 7 below, which shows how each of the three outputs feeds into the four intervention vectors of Mahatma Gandhi NREGA and links it to livelihood capital outputs and resilience capacities.

**Figure 6: The ‘Hanging in, Stepping up and Stepping Out’ framework, for ERADA**

*Source: Based on Dorward et al. 2009 and Steinbach et al. 2016*

**Figure 7: Contributions of ERADA and Mahatma Gandhi NREGA across the five livelihood capitals**

*Source: Adapted from Kaur et al, 2019*
Measuring Resilience
Outcomes - Future Challenges
The framework linking the ERADA project to resilience outcomes via enhanced livelihoods capital mentioned above can be used conceptually as a basis for tracing programme impacts on resilience. If it is to be operationalised as a monitoring tool, it will be necessary to develop indicators associated with each pathway and thresholds associated with the different resilience capacity outcomes which can be traced along causal linkages from the three outputs on the left of the diagram (Figure 7).

As noted above, resilience outcomes have the potential to be measured across a range of dimensions, and there has been much experimentation in recent years with a number of different qualitative and quantitative approaches to measuring resilience impacts, including the development of survey based resilience indices which identify shifts within and between resilience capacities. The ERADA project will need to identify and develop methodologies for capturing and measuring the impact of the three outputs on resilience, based on this framework. The project already has a rural living income component, and income data from this initiative may be used initially as a proxy for household well-being and changes in resilience capacity. Under this component of the project, a living income is calculated, based on the cost of the basket of goods and services required for a decent standard of living, as compared to the actual income of different target groups prior to, during and following project implementation. This will enable the impact of the project interventions relating to Mahatma Gandhi NREGA income, value chain improvements, training through capacity and skills development, and natural resource management and asset creation to be captured in as much as they enhance positive changes in household income. This change in income can be used as a proxy for changes in resilience, on the assumption that it will contribute to reducing risks (in terms of both exposure and vulnerability) and also enhance livelihood capital gains across several dimensions. However, using a single monetary proxy for resilience impacts is problematic, it will be necessary for the project to consider other drivers of resilience beyond income, to identify shifts between the three levels of resilience capacity, and also to include aspects of community resilience which extend beyond the household measurement approach adopted in the living wage initiative. This is a challenge to be addressed by ERADA in order to capture the impacts of the wider convergence, and natural resource management dimensions of the project on resilience. One approach to be explored is the community monitoring of changes on the availability of natural resources and its usage resulting from Mahatma Gandhi NREGA assets and infrastructure initiatives, and an analysis of the livelihood implications at community level of these changes, using simple low cost methodologies such as for monitoring dam water levels, assessing the availability of fodder/natural resources for specific number of months etc.

The framework presented in this paper locates the ERADA project within the broader rural resilience discourse and links it to the key analytical and conceptual approaches currently in usage. To conclude, the next task is to operationalise this framework by developing a set of associated project specific resilience indicators for implementation as well as assessment of the framework.

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24 See for example Kaur et al, 2019.
25 Levine, 2014
26 See for example Ludi et al, 2016
Appendix 1
## Interventions Types to Enhance Different Resilience Capacities

<table>
<thead>
<tr>
<th>Absorptive</th>
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<th>Transformative</th>
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<tr>
<td>Psychological</td>
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<td>Risk Tolerance</td>
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<td></td>
<td>Confidence</td>
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<td>Motivation</td>
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<tr>
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Source: Vaughan, 2018.
Bibliography


TANGO (n.d.)


Enhancing Rural Resilience through Appropriate Development Actions

FOR A GOLDEN TOMORROW

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