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SCALE
Strengthening Capacity in Agriculture
Livelihoods and Environment

RESILIENCE DESIGN FOR AGROECOLOGICAL PRODUCTION

Minimum Standards

October 2021

Background

Resilience Design (RD) is an approach that seeks to strengthen the resilience of smallholder farmers and their farming systems to environmental and economic shocks and stresses through: enhancing natural resources and ecosystem services; increasing energy efficiency; increasing income; contributing to increased nutritional status; and strengthening the skill set, adaptability and confidence of smallholder farmers. RD encourages farmers and those who support them to think differently about agricultural development and identify ways to work with natural systems rather than against them, resulting in more resilient and productive farming systems that enhance household food security, nutrition and incomes.

RD can be applied to agricultural production from the household garden scale to the broader watershed and is relevant in both humanitarian and development contexts. The Resilience Design in Smallholder Farming Systems Approach toolkit provides guidance for applying RD at a farm level and consists of a technical manual, tip sheets and measurement toolkit. The Permagarden toolkit provides guidance for applying RD at a smaller garden scale and consists of a technical manual, 3-day training guidelines and adult education training resources.

Purpose

As Resilience Design is increasingly implemented across multiple organizations, programs and contexts, these minimum standards serve as a guide for ensuring consistency and quality. They apply to all humanitarian and development programs implementing Resilience Design approaches, whether at a garden scale or across a larger landscape. Any site applying RD should, at a minimum, have these components in place.

This document provides an overview of eight minimum standards that apply to all RD site interventions. For specific implementation of these standards at the garden or farm level, see the Permagarden Checklist and the Resilience Design Checklist.

About SCALE
SCALE (Strengthening Capacity in Agriculture, Livelihoods, and Environment) is an initiative funded by USAID's Bureau of Humanitarian Assistance (BHA) and implemented by Mercy Corps in collaboration with Save the Children. SCALE aims to enhance the impact, sustainability and scalability of BHA-funded agriculture, natural resource management, and off-farm livelihood activities in emergency and non-emergency contexts.

Recommended Citation
Brush, Warren, Thomas Cole, Kristin Lambert and Andrea Mottram. 2021. *Resilience Design for Agroecological Production: Minimum Standards*. Produced by Mercy Corps as part of the Strengthening Capacity in Agriculture, Livelihoods, and Environment (SCALE) Associate Award.

Photography Credits
Front cover photo(s): Thomas Cole, African Women Rising

Graphics and icons developed by Evan Walbridge for Mercy Corps as part of the SCALE Award (www.fsnnetwork.org/scale).

Disclaimer
This resource is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the SCALE Award and do not necessarily reflect the views of USAID or the United States Government.

Mimimum Standards

1 Community-led

The design, establishment and maintenance of the RD site is farmer-led and informed by community members to ensure local relevance and ownership.

2 Resources

The RD site maximizes the use of locally available natural and man-made materials and waste streams to increase and diversify production and reduce dependence on external inputs.

3 Design

The RD site has a context-specific design that optimizes resources and external influences for improved efficiency, production, resilience and regeneration.

4 Water

The RD site has multiple strategies to slow, spread, swink and manage rainwater and other water resources.

5 Soil health

The RD site creates a healthy soil food web that supports sustained production and regenerative growth.

6 Biodiversity

The RD site has plants, trees and animals that work together in ways that support the overall health and production of the growing environment.

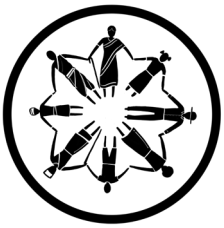
7 Protection

The RD site includes strategies to protect soil and plants from any negative effects of people, animals and external influences.

8 Adaptation

Farmers continually observe and record feedback from the RD site and surrounding environment and adapt their practices to improve production and resilience to shocks and stresses.

Descriptions



1. COMMUNITY-LED. The design, establishment and maintenance of the RD site is farmer-led and informed by community members to ensure local relevance and ownership.

Community engagement and decision making is central to all RD sites. The design and implementation of the RD site must incorporate diverse voices and be driven by community members' knowledge, preferences and goals. At a minimum, RD site development must be led by the farmer(s) or relevant community members, with field agent support. The engagement process should use participatory activities, including walking the site, collecting relevant information through discussions and observation, and mapping the available resources and external influences (such as sun, wind, slope, and roads).

2. RESOURCES. The RD site maximizes the use of locally available natural and man-made materials and waste streams to increase and diversify production and reduce dependence on external inputs.

An RD site maximizes the use of locally available natural and man-made materials and waste streams to increase production and minimize dependence on external inputs. At a minimum, the farmer(s) and relevant community members should identify and analyze local resources to determine which are the most useful for their specific context and goals (e.g. food security, nutrition, economic potential). Consideration should be given to all the functions provided by each resource, how it can link to and support other resources, and the energy, labor and inputs required to maintain it.

3. DESIGN. The RD site has a context-specific design that optimizes resources and external influences for improved efficiency, production, resilience and regeneration.

RD sites are informed by an integrated analysis and design process that is tailored to its specific context. At a minimum, an RD site should be situated and designed such that it maximizes energy efficiency and resource use and optimizes natural and man-made external influences (such as sun, wind, slope, and roads). The analysis of the resources should consider ways to maximize the beneficial influences (for example, water flowing into a compound or field) and minimize negative ones (such as hot afternoon sun), as well as opportunities to integrate waste streams for productive use. Evaluation of each resource's potential impact on issues related to gender, equity and social inclusion must also be included. The design of the site should always start at the highest point and intentionally link interventions in ways that enhance production for household nutrition and income potential as well as resilience to environmental, economic and social shocks and stresses.

4. WATER. The RD site has multiple strategies to slow, spread, sink and manage rainwater and other water resources.

An RD site has multiple strategies to slow, spread, sink and manage water resources. At a minimum, the site must incorporate 1) interventions that prevent runoff and erosion from heavy rain, and 2) interventions that capture, store and manage rainwater, wastewater and water from boreholes, streams or ponds for improved crop production. A well-designed and managed water harvesting strategy will ensure plants and animals have multiple ways to access water throughout the year.

5. SOIL HEALTH. The RD site creates a healthy soil food web that supports sustained production and regenerative growth.

An RD site incorporates multiple strategies to improve soil health. At a minimum, these strategies should include deep soil preparation, the use of natural fertilizers, and protection from negative external influences such as intense sun, wind and rain. Healthy soils will increase production and support the growth of higher nutrient crops that are more resilient to pests, diseases and climatic stresses.

6. BIODIVERSITY. The RD site has plants, trees and animals that work together in ways that support the overall health and production of the growing environment.

An RD site should incorporate a diversity of plants, trees and animals. It should mimic healthy and resilient living systems nearby to support regenerative growth and to provide multiple nutrition and income-generation opportunities year-round. At a minimum, the RD site should integrate perennial plants, such as trees, shrubs, herbs, ground covers and vines, including support species that enhance nutrient availability, protect soil resources, encourage pollination and deter pests.

7. PROTECTION. The RD site includes strategies to protect soil and plants from any negative effects of people, animals and external influences.

An RD site should protect soils and plants from the harmful effects of people, animals and external influences. At a minimum, the site should incorporate protection strategies such as mulching, fencing, well-maintained pathways, protective berms, water diversion drains, and trees or trellises that provide shade and wind protection.

8. ADAPTATION. Farmers continually observe and record feedback from the RD site and surrounding environment and adapt their practices to improve production and resilience to shocks and stresses.

The farmer(s) managing an RD site should regularly observe and record feedback on the site and external environment. This process allows them to adapt their management practices to continually improve the site's production and resilience to shocks and stresses. At a minimum, this should include regular site walks (with a field agent, if relevant) to evaluate whether resources, including water and soil, and external influences are effectively managed. Site walks allow the farmer(s) to identify where improvements can be made and to respond to new challenges such as pests and diseases.

Monitoring Guidance

Routine monitoring of RD program sites is essential to ensure all programs adhere to these minimum standards. Tools and guidance to support RD monitoring at a farm-level and a garden-level include:

Related Materials:

- Resilience Design for Smallholder Farming Systems Approach Technical Manual, Tip Sheets and Measurement Guidelines
- Permagarden Technical manual, 3-day Training Guidelines and Adult Education Training Resources
- Resilience Design Checklist
- Resilience Design in Smallholder Farming Systems Approach Technical Checklist Guidance
- Permagarden Checklist
- Permagarden Technical Checklist Guidance