



CITY REGION FOOD SYSTEM TOOLKIT

Assessing and planning resilient and sustainable city region food systems

Example: Risk scenarios from the pilot cities

Brief description	Example risk scenarios from the CRFS project in Antananarivo, Madagascar, that demonstrate the interaction between a hazard, and the exposure, vulnerabilities and resilience capacities of people, assets, infrastructures, and ecosystems within the CRFS.
Expected outcome	Project team members are able to recognise risk scenarios in their own CRFS context, and have a common understanding of the concept of risk and the key associated terms
Expected output	
Scale of application	Programme wide
Expertise required	Understanding of risk and risk components
Examples of application	-
Year of development	2022
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Relevant CRFS Handbook modules; related tools, examples and activities	Introduction

Full description and justification

This document contains two example risk scenarios from the CRFS project in Antananarivo, Madagascar, that demonstrate the interaction between a hazard, and the exposure, vulnerabilities and resilience capacities of people, assets, infrastructures, and ecosystems within the CRFS.

The first is a risk scenario concerns a climate-related hazard (drought). The second details a risk scenario created by COVID-19 pandemic restrictions.

These examples will help the project team and stakeholders to identify risk and risk components in a real-life setting. They will help ensure a common understanding of the concept of risk and the key associated terms: hazard, exposure, vulnerability, and resilience capacities. This will avoid confusion and cross-purposes, and will provide the basis for assessing risk in the In-depth Assessment module.



1 Dairy farming in drought-prone areas in the Antananarivo hinterlands, Analamanga region, Madagascar

In rural communities in the Antananarivo hinterlands, located along the Route nationale 7 (NR7), dairy farmers that are far from natural water resources (vulnerability) suffer from increasing drought (hazard), causing failure of fodder crops grown to feed herds (impact).

Farmers with small resources (vulnerability) are not currently covered by financial emergency response mechanisms to enable them to purchase fodder in situations of drought (lack of anticipatory and/or absorptive resilience capacity); and when a drought materializes, the emergency response is directed towards consumers, in the face of food shortages.

This means that only farmers who have some money saved can afford to buy alternative, cheap fodder crops, such as corn or rice (absorptive resilience capacity). Farmers with no savings, meanwhile, feed rice to their cows to continue milk production; many farmers grow small quantities of rice for household consumption. Once the rice stocks have run out, the farmers stop dairy production, with consequences for their livelihoods and – with no rice left for their families – food insecurity (impact).

Diversification on dairy farms – such as bee keeping or production of drought hardy vegetables – would provide farmers with an alternative income stream when milk production stops (preventative and transformative resilience capacity).

Even so, the failure of dairy farms has repercussions for processors that source milk exclusively from drought-hit areas (vulnerability), as the lack of raw material causes them to reduce or stop operations (impact) – unless they can access alternative sources from other locations (adaptive resilience capacity). Low-income consumers (vulnerability) are also at greater risk of food and nutrition insecurity (impact), as they cannot afford the higher prices for milk and cheese caused by the milk shortage.

2 Transportation and sale of vegetables during Covid-19 restrictions in the City of Antananarivo

During 2020, strict COVID-19 lockdown measures (secondary hazard) caused the reduction of public transportation from rural areas to the city (impact). Vegetable farmers in remote areas of the CRFS without their own means of transport (vulnerability) could not reach the main roads, from where the production is usually collected by transporters and taken to be sold by the traders who represent the farmers in the wholesale markets in Antananarivo. For many farmers, the inability to get their produce to market resulted in loss of livelihood (impact) and loss of perishable foods (impact).

When producers did reach the collection points, they found transporters were charging a higher fee for taking vegetables to market because they knew it was difficult, resulting in reduced margins for the farmers (impact).

The market traders, meanwhile, had less time to sell produce once it arrived due to restricted market opening hours (secondary hazard). Smaller quantities were sold, leading to reduced income for both the farmers and the traders (impact) and increased loss of perishables (impact). Those market traders who had access to storage were able to reduce losses of less perishable items





(absorptive resilience capacities), while those with processing capacity for perishables could pivot to selling processed or prepared meals, such as soups (adaptive resilience capacity).

For market customers who lacked their own means of transport (vulnerability), the restricted market opening hours (secondary hazard) coupled with reduced public transport (secondary hazard) led to reduced access to food and food insecurity (impact).

