



Food and Agriculture
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Antananarivo: A vulnerable, complex and precarious food system, worsened due to COVID-19



The food system in the urban city region of Antananarivo has been hit by successive shocks. The COVID-19 pandemic and, more recently, soaring fuel prices have added to the climatic hazards that have affected the food system for several years. The impacts of these shocks are numerous, diverse and destabilizing for all players - from producers to consumers - in a food system marked by major structural weaknesses. Under

Food system

Antananarivo is the country's main consumption hub for goods and services, but especially for food. Stretching over a 100 km radius around the city center, the city region of Antananarivo is home to some 850 000 households where all the components of the food system coexist and cohabit¹.

This small geographical area is dominated by production, much of which is practised within the city boundaries, notably rice, leafy vegetables and horticulture crops (tomatoes, onions, potatoes, beans, and so on.). Malagasy people have a special bond with rice, which is their staple food. All farmers² cultivate it on the plains, in the valleys and even on the hillsides.

these conditions, the question is how to strengthen the system's resilience and ensure food security for the 3.5 million inhabitants of the agglomeration? The players involved are not standing by idly, but the challenges are so great that moving forward is becoming urgent.

A participatory diagnostic process has enabled us to identify the essential next steps to be taken.

Mainly self-consumed, this subsistence agriculture is generally rain-fed. As a consequence, the city region of Antananarivo, and indeed the country as a whole, is far from being self-sufficient in rice. Other productive activities take place in this area, notably livestock (dairy cattle, small livestock and their by-products, fish farming, pig farming,) and fruit tree cultivation (citrus, exotic and tropical fruits).

In addition to the most common players in the food system, the central government and technical and financial partners are the most active, but not the most influential ([Figure 1](#)). In fact, the system is dominated by middlemen (collectors, transporters, major

Photo 1 Terres agricole



1 Figure 7 and Figure 8

2 In Madagascar, you can't be a peasant without growing rice or owning rice fields (preconceived ideas).

distributors) and the political and business elites. In this highly unbalanced game, producers - who are generally poorly educated and in a precarious financial situation - and consumers, who are poorly organized, pay the price for the lack of cooperation.

In terms of facilities, the urban region is teeming with markets and places for trading and commercialization of food products, which are often poorly organized. Antananarivo is home to the country's two largest

wholesale markets for agricultural products - Anosibe and Namontana - supported by peripheral markets such as Mahitsy (north-western gateway), Imerintsiasika (western gateway), Talata Volonondry (north-eastern gateway), and communal or neighbourhood markets.

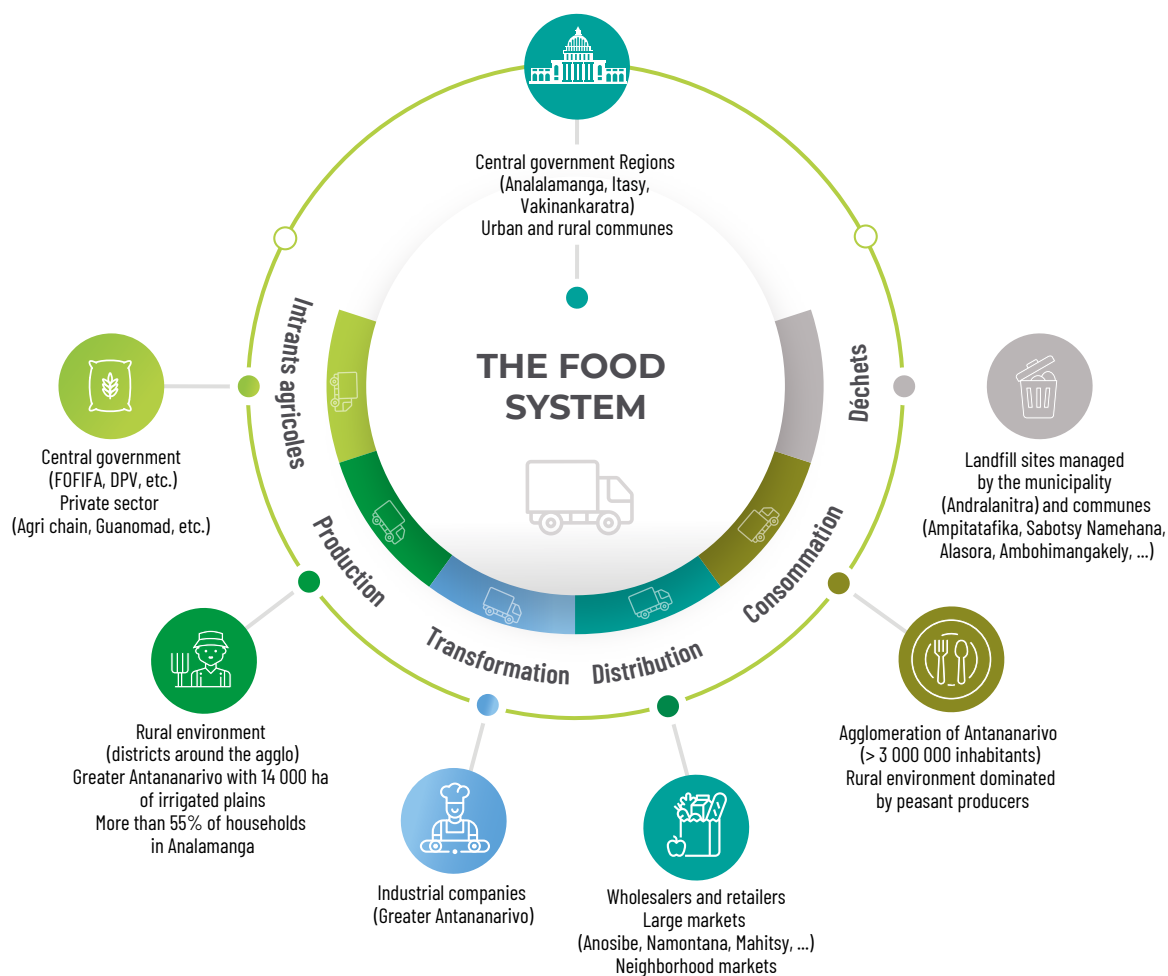
The small size, the concentration of activities, the poor governance of resources and imbalance of players make the system highly vulnerable to the slightest external pressure, such as shocks and stresses.

Photo 2 Marché



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Figure 1 Nodes of the food system in the city region of Antananarivo



Multiple shocks, both recurrent and unprecedented, interrelated and aggravated by structural problems

Over the past five years, Antananarivo's City Region Food System (CRFS) has experienced a number of shocks and stresses, characterized mainly by COVID-19, drought, flooding and high fuel prices (Figure 2). Their impacts are multiple and difficult to manage.

Recurring climatic shocks

In Antananarivo, droughts and floods hit producers regularly and strongly. These shocks are also recurrent and interrelated, and their impacts are amplified by structural problems such as insecurity, lack of land tenure, declining soil quality, lack of irrigation, energy and poor road infrastructure.

As agriculture is essentially rain-fed, any disruption to rainfall patterns and the water cycle causes damage and loss in both yield and production (rice, market

gardening, dairy cattle rearing, among others), often with financial loss (lower income, higher costs) for farmers (Figure 3). Any significant drop in agricultural production, particularly rice production in rural areas, undoubtedly leads to a rise in the price of agricultural products, affecting both urban and rural consumers. Although rice production is self-consumed, it is far from self-sufficient. Food insecurity is on the rise (rationing of meals, lower consumption quantities, reduced nutritional intake), especially for the most vulnerable population (farmers and urban households in difficulty). In addition, the slightest climatic shock destabilizes the food system. This is alarming, as almost all studies agree that these phenomena will become more frequent and more intense in the city region of Antananarivo in the coming years.

Fuel price hikes at the wrong time

The rise in fuel prices is considered a new shock. Most of Antananarivo's food supplies come from the rest of the country, and are mainly transported by road. Fuel price rises of around 40 percent have temporarily pushed up the price of all food products, notably rice (mainly imported from neighbouring regions), leafy vegetables and horticulture crop products, meat and fruit. Consumers and retailers are the most affected (Figure 3). Transporters still manage to maintain their income stable by raising transport costs, or even increase them by negotiating prices with producers, the others who lose. This dependence on petroleum products is here to stay. The risk of further increases in fuel prices in the coming years is real, and will be a source of destabilization for the CRFS.

COVID-19, commercialization and processing among the victims

COVID-19 is one of those unprecedented, unforeseeable shocks. It affected everyone, with varying effects on both players and the territory. Antananarivo experienced three waves of COVID-19 between 2020 and 2023, the impacts of which were not the same: intensities and magnitudes went into decrescendo from the first to the third wave, following the adaptation of traffic restriction measures and those of stakeholders.

The most significant impacts were on commercialization, processing and consumption (Figure 3). COVID-19 had major repercussions on distributors, notably retailers, street vendors, restaurants and canteens, ranging

Photo 3 Grossiste



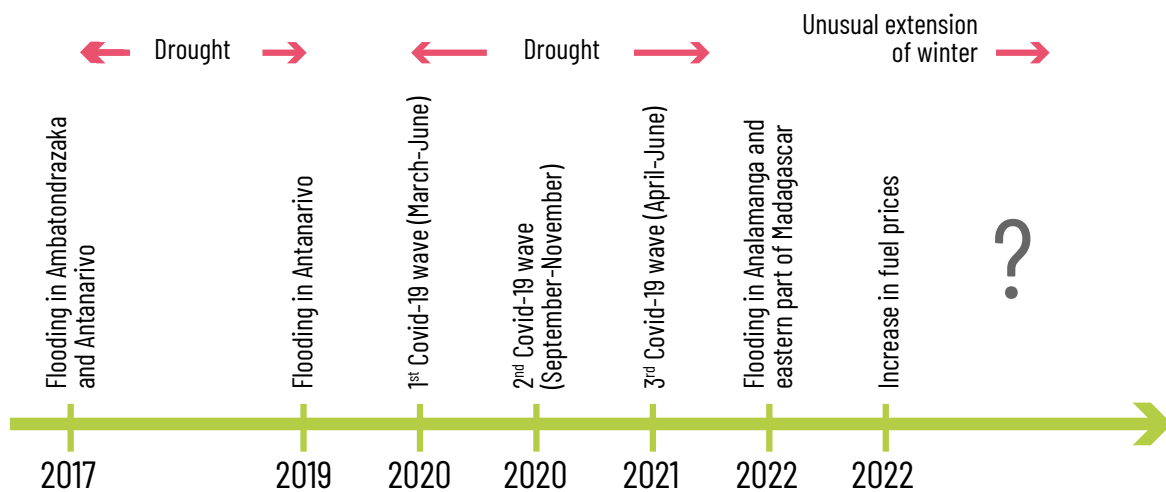
from loss of income to closure due to bankruptcy. Intermediaries (transporters, collectors, wholesalers and suppliers) were quick to adapt and turned the situation into an opportunity, speculating on prices, cheating on actual costs incurred, to make more profit.

On the other hand, those involved in processing (factories, workshops, industrial companies) bore the full brunt of the negative impacts of the restrictive measures and many were unable to recover in time due to the heavy procedures (taxes, labour laws) that govern large firms (hundreds of employees, substantial material resources, high input requirements). Elsewhere, small and medium-sized distributors, with lighter resources and greater administrative and fiscal flexibility, did not face this problem, leading to

their ease to adapt, even if sometimes bordering on the illegal (non-payment of tax obligations, online sales, unfair dismissal). The advantage now is that the system is better prepared, even if new waves of COVID-19 occur, or other diseases or pandemics such as monkeypox appear.

In addition to above-mentioned shocks, other events linked to climate change (water deficit, delayed rains, hail) were recorded throughout the food system, affecting mainly producers - the poorest and most vulnerable of all CRFS stakeholders. These events resulted in production loss and lower farm incomes. At the food system scale, their impacts were perceived as rather minimal, and were generally hidden by the shocks related to droughts and floods.

Figure 2 Timeline of major shocks



The central government acts as a firefighter, but the stakeholders remain passive

Madagascar's insular characteristics have exposed it to various climatic shocks, notably floods, droughts and cyclones. The recurrent occurrence of these shocks has led governments to design and develop public policies to cope with these climatic hazards and mitigate their impacts on human activity, particularly in terms of food (Figure 3). Despite the fact that climate events have intensified and become increasingly frequent, the central government already has a set of policies, often updated, to counter them (*Tsena mora*, *irrigation infrastructure maintenance policy*, see Table 3).

However, according to the interviewed actors, these existing policies tend to be applied only in reaction to shocks, even though they are supposed to be preventive. As a result, they do not bring about any significant change in the system. What is more, their effectiveness is limited, as neither state nor local governments have the capacity to implement them, especially in the absence of financial resources. As

a result, the relevant actions are not implemented in time (before, during and even after shocks) - as in the case of irrigation canal cleaning, rehabilitation works or riverbank maintenance, for example. On the other hand, the texts already specify the sharing of responsibility between central and local governments through decentralized communities (CTD), but the latter are still waiting due to a lack of means on the one hand, and of citizen contribution on the other (lack of resource mobilization and leadership).

At the level of non-state actors, collective initiatives to cope with climate shocks are very few. According to the stakeholders, this is certainly due to the lack of organization at stakeholder level. Malagasy players have a tendency to work in silos, making it difficult to share knowledge and skills to work together for a common cause. This problem of leadership and solidarity is also felt among private players (farmers for example).

When COVID-19 appeared, new public policies were developed to mitigate its impact. These policies were driven directly by the central government (Presidency), with local governments simply collaborating. It has to be said that all players were taken by surprise, and their responses to facing this unprecedented shock were very specific. According to the players interviewed, in the face of the health emergency, certain actions were taken in haste, resulting in unexpected and unfortunate impacts, particularly at the level of certain players in the food system (e.g. Tosika fameno, Vatsy tsinjo, Asa avotra, among others. See [Table 3](#)). On the whole, the most vulnerable were able to benefit from several forms of support and aid provided by the central government, essentially emergency aid, not necessarily sustainable and transformative, but which enabled the population, especially the most vulnerable, to avoid succumbing ([Table 4](#) and [Table 5](#)).

In fact, there have been no real policies or initiatives with system-transforming capabilities following the waves of COVID -19.

Public policies updated with COVID-19 and climate shocks

It seems that the country was not prepared for epidemiological or pandemic shocks, although the risk was always present. Tsenamora was a concept launched by the current President and his team in 2011 during the socio-political crises that Madagascar went through, from 2009 to 2013, to help households face difficulties with the rising prices of staple products. Revived in 2018 for the same reasons, following the current president's return to power, the initiative consists of making staple products (rice, oil, sugar) available to households in need, at low, affordable prices. During the three waves of COVID-19 when prices rose, this initiative brought relief to many families, according to interviewees, despite the fact that the distributions were marred by theft and embezzlement from certain officials (Figure 3). The concept is still existent, as during the recent impacts of cyclone Batsirai, some of the affected areas again benefited from Tsenamora.

In addition to the Tsenamora, other public policies mentioned by stakeholders include the regular maintenance of irrigation infrastructure, which are technical measures to accompany the installation of water infrastructures. This is a very useful measure, very much demanded by the interviewed farmers, to better control the water used for agriculture and livestock. In the Antananarivo plain, this is being carried out by APIPA³ in collaboration with the communities (opening of water intakes, cleaning of canals in HIMO⁴, mode, rehabilitation of structures, etc.). This measure is scheduled for July and September each year, but due to a lack of financial resources, it is often delayed or even skipped. The central government and Technical

and Financial Partners generally contribute to canal cleaning operations (e.g. the ministry in charge of regional planning, the AFD with the PIAA project, the World Bank with the PRODUIR project).

New forms of social protection to cope with shocks

During periods of shock and stress, in particular during COVID-19, new policies were developed in response to the impacts (Table 3). For most social actions, the central government is the main coordinator. Local governments, decentralized communities and other partners simply collaborate to implement these public policies. The policies are aimed primarily at households in need located in urban areas. In general, these are reactive measures designed to strengthen absorption capacities, but there are organizational inefficiencies ([Table 4](#) and [Table 5](#)).

According to the actors interviewed, the measures taken to prevent the spread of COVID-19 destabilized the food system. This situation led to discontentment among the population, especially in urban areas, forcing the Presidency to develop social aid initiatives to absorb the impact of shocks, including COVID -19.

The implementation of these unprecedented measures developed by the central government has involved the participation and engagement of all. The private sector, civil society, the Technical and Financial Partners and the communities were all very much mobilized.

Nonexistent collective initiatives or strategies

According to the interviewed actors, there are no collective initiatives to deal with shocks to the food system. Only individual initiatives or actions have emerged, most often isolated, poorly organized and badly conceived, since they create more problems than solutions. They amount to adaptive rather than preventive measures, with no real ambition for transformation. In general, it's the players themselves who come up with the idea (individual responses), which is then gradually generalized.

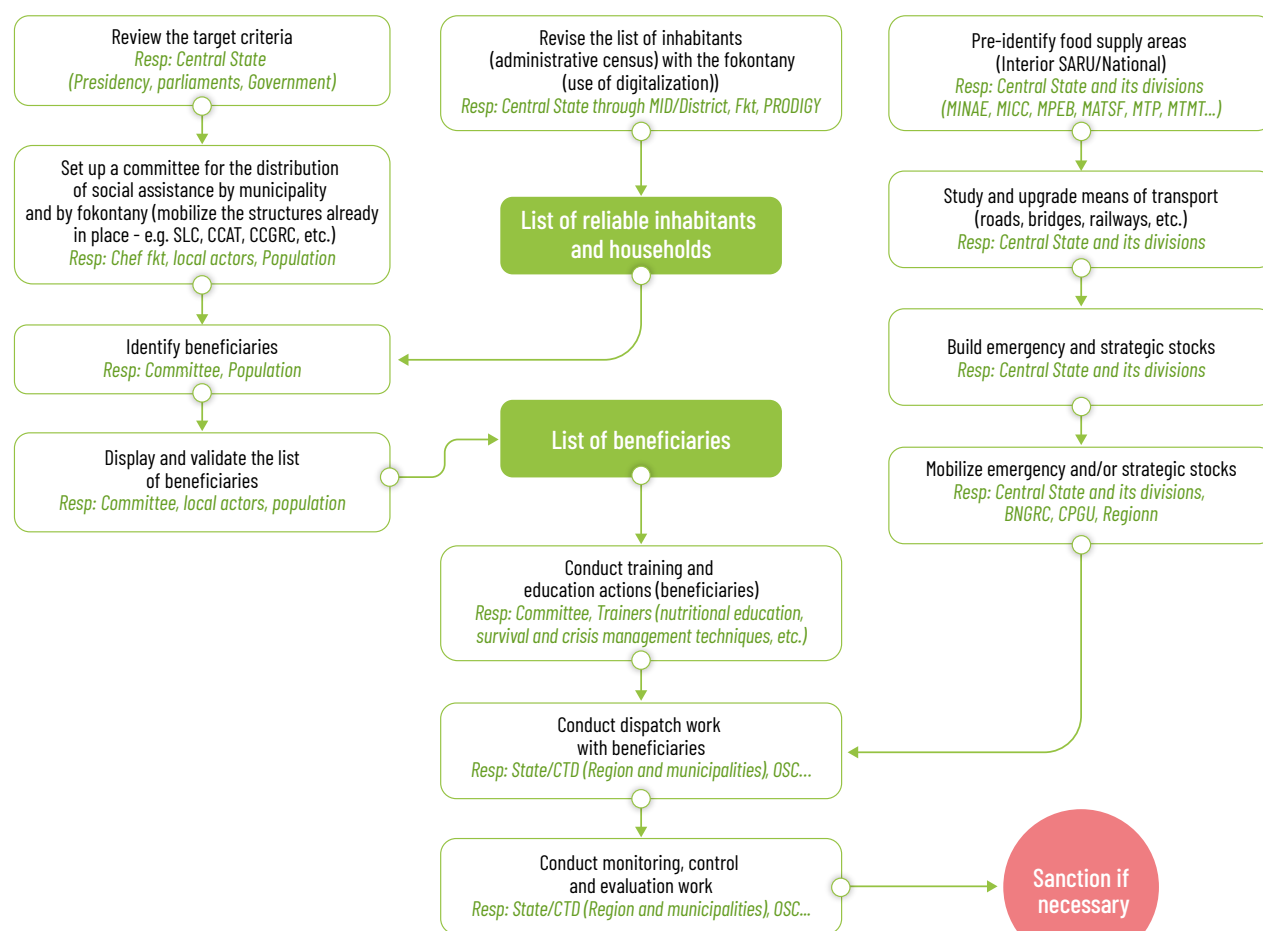
For the more structured players, the strategies or initiatives stem from the results of a market study (development and implementation of a customer loyalty policy, improving visibility by taking part in fairs or events related to the food system or food, development of a pricing policy for example). For many, these initiatives have enabled them to withstand and overcome the impacts of shocks and stresses more easily than other players.

But some of these individual strategies are destabilizing. For example, among wholesalers, the storage and retention of non-perishable food products (e.g. rice and dry beans) has become widespread to fuel speculation during periods of shortage. This enables wholesalers to generate higher margins, even if the practice verges on being illegal.

3 APIPA: Authority for Flood Protection of the Antananarivo Plain

4 HIMO: High Labour Intensity, practice involving the local population through financial and in-kind compensation (rice paddy, ...)

Figure 4 Recommendations and steps to follow for social protection aids



Support for adaptation practices

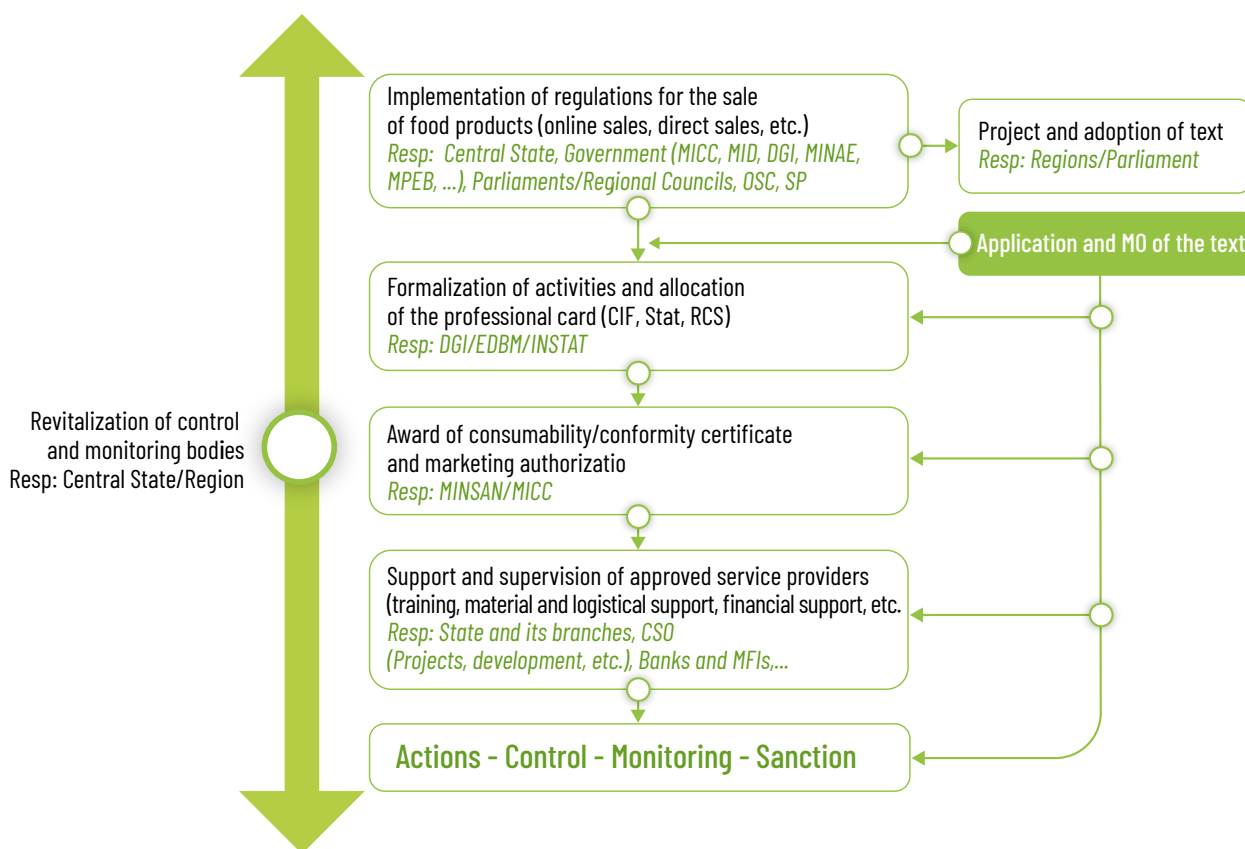
With regard to adaptive initiatives in response to potential impacts, the promotion of new distribution channels to facilitate meetings between producers and consumers could considerably improve the resilience of the food system in the event of future shocks. In this respect, food product sales, whether direct or online, with or without home delivery, were identified by participants in the second focus group as collective initiatives to be developed and scaled up. These initiatives have made it possible to overcome many of the problems associated with shocks, notably COVID-19 (see [Table 3](#)).

Their implementation can be facilitated by the quality of the NTIC network (2G, 3G, 4G and soon 5G) throughout the Antananarivo CRFS and the proximity

between production and consumption zones. In addition, the recent rise in fuel prices combined with the spread of diesel and adulterated petrol have demotivated motor vehicle users. As a result, mobility is increasingly restricted to only what is essential.

However, there is as yet no precise regulatory framework governing online sales, particularly at the level of sellers/distributors. For the time being, the activity is informal, with no professional credentials, no tax obligations, no sanitary controls (consumability and compliance.), difficult recourse in the event of a dispute, and where consumers feel the lack of professionalism or even scams and fraud. This situation penalizes genuine professionals in the distribution business, which is why this activity, which is attracting more and more participants, particularly young people, needs to be regulated in accordance with existing national laws.

Figure 5 Recommendations and steps for promoting new distribution channels (online sales of food products)



Supporting the adaptation of production systems to prevent future crises

With regard to preventive measures aiming to improve the sustainability of Antananarivo's food system in the face of future shocks and stresses, and which could be transformative:

- re-engagement of the state in agricultural extension services⁵; and
- the promotion of forms of support from the state and its decentralized entities to farmers, producers and private farms (e.g. Revolving, Dokany mora ho an'ny mpamokatra, Titres verts, Fihariana).

In terms of reengaging the state in agricultural extension services, the participants recommended several actions, whose order could be defined on the basis of a national or regional agricultural extension system policy or strategy:

- set up schools and training centres for agricultural technicians and deploy them at district level rural communes (CEFAR⁶, EFTA⁷, Agricultural high schools and colleges);
- recruit agricultural extension agents from schools and centres as state or regional civil servants and assign them to districts and rural communes;
- re-organize agricultural extension structures (chiefs of zone, grassroots extension agents, sefom-boly) and make them functional;

5 A set of services that provide technical advice to farmers: crop farmers, stockbreeders, fish farmers, etc. Extension services include technicians, trainers, advisors, project managers and community development agents, rural service providers (PSR), etc. Source : <https://blogs.worldbank.org/fr/voices/donner-la-parole-aux-jeunes-pour-transformer-la-vulgarisation-agricole>.

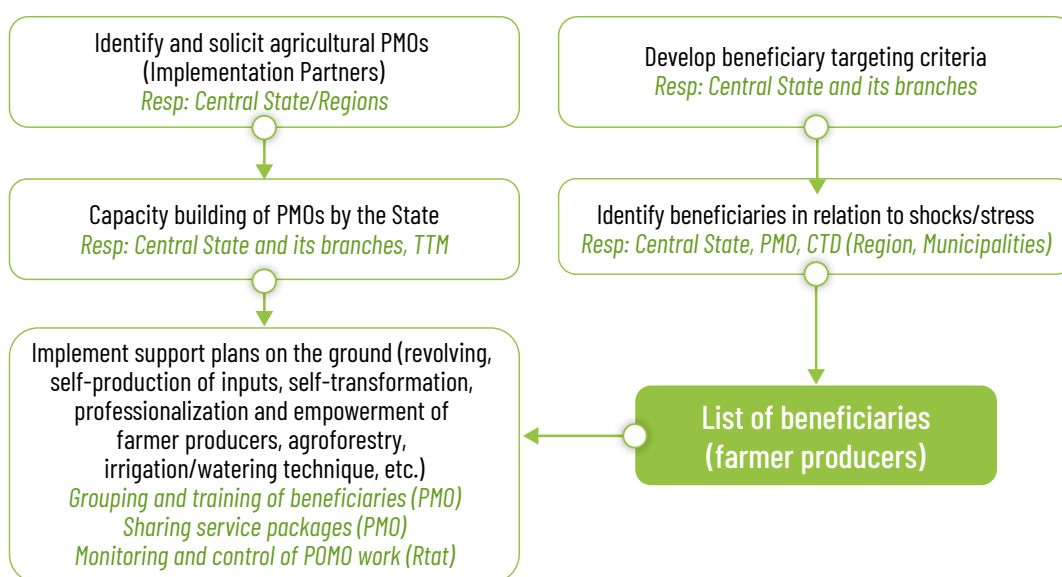
6 CEFAR: Agricultural and rural training centers and establishments.

7 EFTA: EcTraining School for Agricultural Technicians

- promote partnerships between the state, the private sector (rural service providers) and farmers; and
- ensure the availability of agricultural inputs (fertilizers, adapted and resilient seeds, agricultural materials and equipment) and technicians (training, support and assistance for producer farmers,), as well as any other useful services.

Participants in the second focus group also mentioned the promotion of forms of support from the State and its branches to producer farmers and private farms as an activity that could strengthen the resilience of CRFS in the long-term and bring about transformation.

Figure 6 Recommendations and steps to follow for the promotion of forms of state support and its decentralized entities to producer farmers and private farms (e.g. Revolving, Dokany mora ho an'ny mpamokatra, Titres verts, Fihariana, ...)





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This factsheet is developed by Zo Lalaina NY ONY, under the guidance from Thierry Giordano (CIRAD) and support from FAO CRFS team (Guido Santini, Carmen ZuletaFerrari, Roman Malec, Isabella Trapani, Jia Ni), as well as the Municipality of Antananarivo and Rija RANAIVOARISON from FAO-Madagascar Office.