

Insurance and agricultural development: new dynamics in Algeria, Morocco and Tunisia

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Summary

Farmers, whether in the northern or southern hemispheres, are constantly faced with many and varied risks that can cause a shortfall in yield and significant drops in income. These calamities, if they occur on a broad scale, may even constitute a threat to food security on a local, national and even international level. Family-based agriculture in developing countries is highly vulnerable to agricultural calamities, especially those linked to weather conditions such as drought or flooding. In situations like these, insurance represents one of the preferred available tools for risk management. Even though agricultural insurance is very prevalent in the northern hemisphere, many farmers in the southern hemisphere and in North Africa's Maghreb in particular, do not have access to it.

And yet, agriculture contributes significantly to the GDP (gross domestic product) of Algeria, Morocco and Tunisia – between 10 to 15 % depending on the country – through different crop productions: grains, market gardening, fruit orchards, sugar and livestock. Smallholdings, which account for the majority of agricultural undertakings, face high climate-related risks and drought in particular. Agricultural insurance schemes have long been available, but penetration rates remain low: the share of insured farms only ranges from 5 to 8 % depending on the country. The sector seems to be fairly unprotected when it comes to adverse climatic factors, whereas in other countries recourse to insurance is more common, especially when the scheme is supported by the government. For example, in the U.S., the Federal Crop Insurance Program covered 80 % of the country's farmed surface area in 2011. Nevertheless, thanks to the efforts of public and private actors, innovative measures are being prepared and implemented in order to jump-start the sector.

Agricultural Insurance in Morocco

Agriculture accounts for only a small share of the insurance sector's business – in fact, less than 3 % of total turnover in 2011. In 2010, the Moroccan firm *Mutuelle agricole marocaine d'assurance (MAMDA)*, the agricultural sector's main insurer, counted 100,000 participants, or less than 7 % of a total of 1.5 million Moroccan farmers. And yet, agriculture accounts for 15 % of the country's GDP thanks to a utilized agriculture area of 8.7 million hectares, of which 65 % for grain and 11 % for fruit orchards.

MAMDA's core business concerns insuring persons and materials. The mutual company proposes a line of products covering agricultural machinery (tractors), fire risks, livestock loss, and hothouse crop damage and third-party liability. MAMDA also markets two government-subsidized products: hailstone insurance since 2009 and multiple risk climate insurance since 2011. These products have been much more difficult to introduce and have been revamped several times over the past two decades.

From 1994 to 2010, a program to cover drought risk for cereal grains was initiated by the government, which was also the real insurer of the system. Premiums and compensation under

the scheme were highly subsidized. Only 18 provinces identified as grain-producing and with an « acceptable » level of risk, were eligible for the scheme. The original aim was to insure 300,000 hectares, but the areas insured fell short of this objective with only 65,000 hectares covered in 2010-2011, because of a level of compensation deemed too low for a premium considered too high.

Under the new agricultural strategy launched in 2008, christened the Green Morocco Plan (*le Plan Maroc Vert*), the government assumed a leadership role in the reform of the terms of agricultural insurance. For example, a government-subsidized hailstorm insurance policy launched in 2009 by MAMDA. Prior to that, a non-subsidized insurance scheme for hailstone damage was marketed. But the insurance package was seen as too expensive and few farmers subscribed to the policy: approximately 200 representing about 1,000 insured hectares.

This new scheme covered grains until 2011, after which cereal crops have been covered by a multiple risk climate insurance scheme. Today this includes arboriculture, truck farming, vineyards and seed in the 5-region « hailstorm corridor ». Premiums are calculated on the basis of the geographical area and crop grown. Contributions, in terms of percentage of insured capital, vary between 1.62 to 4.50 %. Premiums are subsidized up to 20 to 40 % on the basis of the size of the farm (40 % for those under 10 hectares). In 2011-2012, approximately 20,000 hectares were covered by this product. In time it will be replaced by the multiple risk climate scheme.

Multiple risk weather insurance was launched in 2011. It provides coverage for grains and legumes across the entire country in case of hailstorms, heavy frost, flooding, violent winds and sandstorms. MAMDA acts as insurer, but the government subsidizes the premiums, with a decreasing premium rate as surface area increases. The thresholds are as follows: surfaces under 3 ha; 3 to 5 ha; 5 to 30 ha; over 30 ha. For the first category, the premium is subsidized at 90 % and amounts to 26 dirham/ha (2 euros/ha), for a maximum compensation of 1,450 dirhams/ha (130 euros/ha) to cover seasonal cropping costs engaged by farmers. The indemnity is calculated on the basis of a loss of yield rate. Assessments of losses are done by MAMDA in regions officially declared disaster zones by the government.

In 2011-2012, 327,000 hectares were insured by 20,000 subscribers, mostly for grain crops (approx. 80 %). The first category of coverage (surfaces under 3 ha) represented 77 % of insured lands. For the 2012-2013 growing season, 470,000 hectares were insured by 22,000 farmers. The goal for 2015 is to reach 1 million hectares. These results can probably be chalked up to the attractive price of premiums for smallholders as well as the information and extension campaigns carried out jointly by various government departments and MAMDA. Nevertheless, the compensation amounts seem to have been vigorously debated with farmers, as it is not always clear that the stated amounts were ceilings and not guaranteed amounts for every claim.

The launch of an indexed insurance scheme covering drought risks for grains and fodder is a project currently being considered. This scheme would be a part of the multiple risk weather insurance scheme. The point is to bring down costs, and obtain a more impartial scheme for triggering compensation, and to reduce the risk of information imbalance and moral hazard. The insurance product is being jointly developed by the Ministry of Agriculture, MAMDA, Moroccan meteorological services and the National Agricultural Research Institute (*l'Institut National de la Recherche Agronomique - INRA*).

Agricultural Insurance in Tunisia

Agriculture represents a tiny share of Tunisia's insurance market (3 % in 2009). For instance, in 2009, agricultural insurance turnover reached some 30 million dinars (approx. 15 million euros) for a total market of 1 billion 150 million dinars (approx. 575 million euros). And yet, agriculture represented 12 % of Tunisian GDP in 2008. Agricultural surface areas were 4.9 million hectares, the main production being arboriculture (49 %), grain (37 %), fodder (9 %), truck farming (4 %) and legumes (2 %). The insurer, *la Caisse Tunisienne d'Assurances Mutuelles Agricoles (CTAMA)* accounts for about 80 % of the insurance business in the agricultural sector. Agricultural risks covered by CTAMA are the following: hailstorm damage, (grain, arboriculture, vines, and market gardening), fire damage to crops, multiple risk for greenhouse crops (hail, heavy frost, storms, fire, and lightning), livestock loss, equipment, buildings, and third-party liability. Concerning hailstone damage to cereals, the premium is subsidized by 50 % and represents about 3 % of the total amount insured. Drought is one of the risks not covered, whereas in Tunisia this hazard represents the highest source of claims, with a drought occurring every 4 to 5 years on the average. When dealing with claims, the CTAMA sets up a decentralized network of company and private insurance adjusters who estimate damages.

The sector is characterized by a low insurance penetration rate among smallholders. Approximately 40,000 farmers are insured, that is, less than 8 % of a total of 516,000 Tunisian farmers. Several reasons have been advanced to explain this. First of all, the use of classical financial services proposed by banks and insurance companies for the agricultural field remains scant. Only 7 % of Tunisia's farmers have access to credit, mainly due to the required banking conditions and the complexity of administrative procedures. Other parameters to come into the picture include continual division of farm plots which makes product distribution increasingly difficult, covering partial climate risks, as well as limited cooperation processes with the farming profession as a whole.

Above and beyond insurance schemes, two other mechanisms also help to manage farming risks: the National Guarantee Fund (*le Fonds National de Garantie*), which acts a guarantee for bank credits, in particular for drought-risk in agriculture, and the Natural Disaster Fund (*le Fonds de Calamités Naturelles*), that acts to provide reparation for damages incurred by farmers for uninsurable or exceptional climate hazards. But in reality, these two funds have only rarely intervened due to malfunctions in the way they are implemented.

Several new prospects for action have been evoked in order to develop the insurance sector. Implementing an index-based weather insurance scheme for drought risks could be based on several pre-existing elements: structured agronomical and meteorological data gathering systems, the CTAMA agency network planning the entire country or national and international reinsurance firms that may take an interest. Nevertheless, the feasibility of such a project should be considered more closely from a technical, commercial and financial viewpoint. The appropriate studies are now underway. Moreover, a reform of the Natural Disaster Fund (*Fonds de Calamités Naturelles*) might allow for coverage of risks that are non-insurable for the private sector. The National Guarantee Fund (*Le Fonds National de Garantie*) could also be revamped, especially concerning its procedures for intervention, to effectively guarantee farm loans granted by banks. Lastly, though micro-finance institutions are not yet allowed to offer insurance products, future laws may open this possibility. In that eventuality, institutions would be ready to develop micro-insurance products, including one for farmers, in partnership with insurance companies. The idea would be to link these products with micro-credit.

Agricultural Insurance in Algeria

Farming only represents a very small share of the Algerian insurance market – less than 2 % - with a turnover of 9 million euros in 2010, of which 74 % were logged by the *Caisse Nationale de Mutualité Agricole*, (CNMA). Yet the contribution of the agricultural sector to the national economy is significant, accounting for 8 to 12 % of GDP, with a farmable surface area of 8,500,000 hectares. Major crops occupy over half of farmed land, whereas arboriculture and truck farming account for 6.5 % and 3.5 % of this surface area respectively. Around 30 to 40 % lies fallow.

The CNMA's insurance products cover the following major crops: large-scale crops (hail, fire) ; truck farming (hail), industrial potato and tomato multiple risk coverage (hail, freezes, windstorms, flooding, sirocco winds) ; hothouse farming – truck farming, flowers (multiple risk insurance for hail, heavy frost, windstorms, flood, snow, fire) ; arboriculture – date palms, fruit trees, citrus trees, olive trees – and vines (multiple risk insurance hail, freezes, windstorm, flooding, sirocco winds). In addition, insurance covering livestock loss, buildings and equipment and third-party liability are also offered.

Multiple risk weather insurance was developed back in 2009 for strategic crops that were a part of Algeria's better structured sectors, in terms of irrigation systems (potatoes, tomatoes, dates). Premiums for irrigated systems represented 10 to 15 % of production costs, with claims compensation equivalent to 25 to 30 times the premium. Thus, in 2009, 65 % of land used for autumn potatoes was insured. Nevertheless, drought risks are not covered, even though it is the highest risk for pluvial cereals.

Agricultural insurance penetration rates are low, with only 5 % of Algerian farmers holding policies, that is, about 50,000 farms out of the million existing in Algeria. Different reasons are cited to explain the situation: a widespread splitting up of farmland, and the difficulty of reaching smallholders, a low rate of access to financial services in farming, (credits and farm insurance), lack of coverage for certain risks such as drought, lack of public-sector support for insurance, and weak coordination between the sector's main players.

In addition to the insurance system, there is also a Fund for Agricultural Disasters (*Fonds de Garantie contre les Calamités Agricoles*, FGCA), set up by the government in 1990. The fund aims to compensate farmers for non-insurable risks, including drought. Yet the set-up did not meet farmers' expectations, especially after a series of adverse climatic events. Granted compensation was insufficient. The FGCA has not been in operation for a decade or so.

Since 2008, the CNMA has been designing several new farm insurance products in liaison with the government's Policy for Agricultural and Rural Renewal (*Politique du renouveau agricole et rural*). In addition to the multiple risk climate insurance offered since 2009, two products dealing with cereal grains are being designed. A multiple risk climate insurance pilot project on irrigated cereal grains was launched in 2013. Risks covered are hail, freezes, windstorms, flooding and sirocco winds. Also, insurance against drought for pluvial cereal grain crops is currently in preparation. The CNMA deems it absolutely necessary to subsidize premiums for this product, in order to propose an acceptable premium rate to farmers. In addition, the development of indexed insurance is also envisaged. This would concern cereal grains, potatoes, and later on loss of livestock, plus risks of flooding and drought. Micro-insurance projects are also under consideration. And lastly, the CNMA undertook a pilot

exchange project on insurance issues between 50 or so farmers from two regions in the eastern and western parts of the country. Results were positive and participants requested that the experience be repeated.

What contribution can insurance make to agricultural development in the Maghreb? Cross-cutting issues

Extending insurance coverage to different weather hazards

In the Maghreb, farm insurance against weather risks has historically been provided for a « known hazard », mainly protection against hailstorms. Yet, due to the extent and diversity of hazards not yet covered (drought, frost, windstorms, etc.), projects have recently been oriented towards multiple risk policies. These policies have been launched in Algeria and Morocco, where the insured surface areas subsequently increased significantly. Moreover, feasibility studies are underway for index-based insurance schemes as well. The Maghreb countries have the means to implement them, thanks in particular to their well-organized meteorological and agricultural data collection systems. At any rate, these systems will probably have to be strengthened in order to provide a more fine-tuned spatial coverage, and this might require significant investment.

Above and beyond the technical aspects the greatest challenge is the economic viability of the insurance scheme, whatever the type of insurance chosen – a classical multiple risk or index-based policy. That viability will be heavily dependent on the frequency of extreme situations, especially drought, and on a clear and shared definition of what constitutes an insurable period of drought. Indeed, these periods of drought are far from rare and climate change may make them even more frequent.

Making insurance an economic and not an administrative affair

In the Maghreb region, governments have traditionally compensated farmers directly for loss of production due to climate hazards, except for a few specific hazards like hailstorms, which were left to the insurance companies. However, malfunctions or lack of compensation fund budgets in the public sector have led to governments transferring the risk to private insurers. This transition took place in the 2000's within under the structural reform efforts on agricultural policy. Morocco has made the most progress in this respect, thanks to its launch of multiple risk insurance by MAMDA in 2011.

Nevertheless government intervention in the farm insurance field will remain significant through the medium term. And it will touch upon three aspects: premium subsidies, that seems to be inevitable for certain risks; reforming the natural disaster compensation funds, to cover non-insurable regions or risks; lastly, joint development of credit loans and farm insurance.

Access to insurance by smallholders

Small and medium size holdings (under 50 hectares) are the majority of farms in the Maghreb. They are also the most vulnerable to weather hazards. And yet they have scant recourse to farm insurance, and loans, as financial institutions are reluctant to fund smallholdings because of the attendant risks. Three kinds of measures are being considered or have already been implemented to provide insurance solutions better tailored to smallholders' needs:

- A specific premium subsidy for smallholders: this already exists in Morocco for multiple risk weather insurance. It also played an important role in greatly increasing the number of policies taken out since the product was launched in 2011. The cost to the Moroccan government is relatively low so far. However, massive subsidies could alter the perception of risk by farmers, with the unwanted side-effect of farmers neglecting to take preventive measures to reduce upstream risk.

- Micro-insurance: micro-finance institutions would be interested in launching this kind product in order to better guarantee the reimbursement of micro-loans they grant. This would make it necessary to carefully identify the risks that could be insured by this sector and involve new developments in the regulatory context to allow for its creation and growth;

- Information and cooperation with small-scale producers. In Morocco, the government and MAMDA have fostered widespread extension work on the new insurance products across the entire country. In Algeria, the CNMA has organized meetings that bring together farmers from different regions to share their experiences with insurance schemes. Positive results have been obtained from these initiatives; farmers have garnered a better perception of risk thanks to them. Nevertheless, above and beyond information and awareness exercises like these, cooperation with farmers through different processes could be enhanced and started at the product design stage by working with professional farmers' organizations. This issue is also part of a larger challenge that involves narrowing gaps between banks, insurance companies and the farming profession in the Maghreb.

The role of insurance in a more comprehensive scheme of risk management

Insurance is only one risk management tool among others. It does not allow us to reduce risk of losses in yield a priori, nor does it remedy a structural lack of water. Other tools must therefore be utilized to complete the insurance. To protect against drought or recurrent hydro deficits, the Maghreb countries have taken different measures, such as providing support for equipment in localized irrigation systems to save water, for materials used to collect and store rainwater, and to expand irrigated areas. Technical and financial assistance are nevertheless necessary to assist smallholders in implementing these innovations and adapting them to local conditions. Training specifically dealing with risk management for the entire undertaking could also be developed. Accounting tools could also be used to provide a long-term vision for the smallholding.

Insurance, therefore, cannot be seen as some miracle remedy, but along with other measures, it can help us design comprehensive strategies of agricultural risk management. Different scales of farming must be considered and made mutually coherent; plot, farm, agricultural region, an entire country. This approach means enhancing our knowledge and understanding of different risks, in order to help build more resilient farming strategies in the face of climate change.