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AGRICULTURE AND RURAL DEVELOPMENT FOR INCLUSIVE GROWTH AND FOOD SECURITY IN MOROCCO

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Global Economy
and Development
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Abstract:
Morocco has so far been a success story in the Arab world. It has followed a gradual approach to political reforms and democratization, which led to the adoption of a new constitution and the holding of free parliamentary elections in 2011. At the same time, economic growth averaged 4.5 percent between 2000 and 2010, reached 5.0 percent in 2011, 2.7 percent in 2012, and 4.4 percent in 2013. That is, Morocco has avoided the political upheavals and economic meltdowns that plagued other Arab Countries in Transition (ACTs). Maintaining this record of success will require continued political and economic reforms.

On the economic side, the focus needs to be on enhancing inclusiveness and ensuring that the benefits of growth are widely shared. More than 40 percent of Moroccans live in rural areas and depend, directly or indirectly, on agriculture for their livelihood. They also happen to be much poorer than those living in urban areas. And, rural poverty is three times higher than urban poverty. Experience from around the world indicates that as Morocco continues to grow, more and more people will migrate from the countryside to cities. Hence, an inclusive growth strategy needs to include investments in urban infrastructure as well as programs to increase urban employment.

At the same time, more needs to be done to increase rural living standards, reduce regional income differentials and lower the rate of rural-urban migration, while concomitantly increasing agricultural production and enhancing Morocco's food and nutrition security. The Government of Morocco is implementing a rural development strategy with two pillars: the first pillar focuses on large modern farms, and the second pillar focuses on smallholder and family farming.

This paper argues that the twin goals of inclusive growth and food security would be best achieved by emphasizing the importance of the second pillar, and by adopting an approach that includes: (i) increasing food reserves and using financial markets for risk reduction, (ii) improving the linkage of smallholders and family farmers to markets and help them increase domestic food production while raising their incomes, and (iii) supporting the development of independent producer organizations that provide voice for smallholders and also help them gain better access to input and output markets.

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AGRICULTURE AND RURAL DEVELOPMENT FOR INCLUSIVE GROWTH AND FOOD SECURITY IN MOROCCO

Hafez Ghanem

INTRODUCTION

The agriculture sector is crucial for achieving Morocco's objective of inclusive growth and poverty reduction. The Government of Morocco is aware of that and has adopted an ambitious program (Plan Maroc Vert, or PMV*)* that aims to increase agricultural production and reduce rural poverty and rural-urban inequality. This paper stresses the importance of the second pillar of the PMV, which focuses on supporting small family farmers. It also argues that it needs to be complemented by the introduction of new social safety net programs based on cash transfers, and by building new inclusive economic institutions that represent small farmers and ensure that they have a voice in the policymaking process.

The Arab revolutions that started in late 2010 in Tunisia and then spread to Egypt, Yemen, Jordan and Morocco called for economic inclusiveness and greater social justice. Achieving these objectives requires paying particular attention to poorer and less developed regions that mainly depend on agriculture (directly or indirectly) for livelihood. This is particularly relevant for Morocco. Rural poverty in Morocco is about three times higher than urban poverty, and the majority of the rural poor depend directly or indirectly on agriculture for their livelihood.

The policies and programs recommended here to develop agriculture should be viewed as one component of a broader strategy to achieve inclusive growth. The proportion of Moroccans working in agriculture—about 40 percent—is very high relative to countries at a similar level of development. For example, that ratio is about 15 percent in Tunisia, 20 percent in Algeria and 30 percent in Egypt. The experiences of other countries indicate that this proportion will fall as rural dwellers (particularly youth) migrate to urban centers. Unless appropriate policies and programs are put in place, rapid rural-urban migration could lead to increasing urban unemployment and social discontent, as new migrants join the large number of urban poor living in overcrowded slum areas with little access to basic physical and social infrastructure. Therefore, inclusive growth policies for Morocco need to include agriculture and rural development to slow migration out of rural areas, as well as investments in other sectors of the economy and in urban centers to facilitate the inevitable economic and social transformation towards a more urbanized society.

The remainder of this paper is divided into four sections. The first section reviews political economy developments in Morocco, and how the country was impacted by the Arab Spring. The second section describes key challenges of agriculture and rural development in Morocco. The third section discusses possible strategies to deal with those challenges, and the fourth concludes.

POLITICAL ECONOMY BACKGROUND: WHY AGRICULTURE AND RURAL DEVELOPMENT ARE IMPORTANT?

Morocco is one of the countries affected by the Arab Spring. The country was growing at an average rate of about 5 percent a year for the 10 years before 2011, which led to a decline in poverty from around 15 percent of the population to 6 percent. Yet, Moroccans (especially youth) felt that the fruits of that growth were not equitably shared. They demanded more freedom, social justice and an end to corruption. In this regard, Morocco is very similar to other Arab Spring countries (e.g., Tunisia and Egypt) where youth remained discontented in spite of fairly robust economic growth and improvements in social indicators.

But, with the exception of Jordan, Morocco is different from other Arab Spring countries because it is a monarchy and the king enjoys widespread acceptance and legitimacy as the head of state and the country's spiritual guide ("Commander of the Faithful"). This allowed Morocco to avoid the revolutionary chaos, civil strife and institutional meltdown observed in other Arab Spring countries. The king held the country together and led the reform process.

Thus, from the early days of the Arab Spring, Morocco picked a different path from that of other countries. The people did not demand a change of regime, they wanted its reform. Moroccans appear to have decided upon a gradual transition toward a more open and democratic system, rather than abrupt regime change. In other words, it is possible to argue that Morocco chose evolution rather than revolution.

The king led the reform process, and a new constitution was adopted by referendum in July 2011. The constitution strengthened the powers of the prime minister and of the parliament, as well as the independence of the judiciary. It enshrined more political and social rights, and called for a more open and decentralized governance system, laying the groundwork for more inclusive economic growth. As proscribed by the new constitution, the king appointed as prime minister the leader of the party that won the most seats in parliament (Mr. Benkiraine, leader of the moderately Islamist PJD).

The new constitution did not significantly reduce the powers of the king, who continues to be the dominant political figure in Morocco. King Mohamed VI is believed to be widely popular, and he is clearly leading the transition. Evolutionary change carries the risk of a slowdown, or even a halt, in the reform process as powerful interest groups feel threatened and attempt to block the transition. This, in turn, could lead to disappointment and frustration among the population, especially the youth, and hence to political unrest. That is why leaders of this type of change need to implement reforms at a pace that is fast enough to maintain public support for the evolutionary process, while at the same time avoiding abrupt changes that could result in instability and disruption.

Economic reforms that help achieve rapid and inclusive growth are important for the success of the political transformation. According to the World Bank,[1] inequality is a key challenge. Morocco's Gini coefficient of 0.41 is high compared to other emerging economies, and indicates that inequality is a serious problem. This is compounded by huge disparities across regions. For example, the poverty rate in the region of Gharb-Chrada-Beni Hssen is 72 percent higher than the national average. Reducing inequality and regional disparities would help increase support for the political process.

Poverty is particularly high in rural areas where most people depend directly or indirectly on agriculture for their livelihood. About 10 percent of rural dwellers live below the poverty line, and they represent two-thirds of all the poor people in Morocco. They tend to live in regions with difficult geographic conditions (e.g., mountainous) and they lack access to basic physical infrastructure to connect them to markets, as well as the social infrastructure necessary for human development.

The issue of food security and food prices is also important for Morocco. In fact, some observers argue that food price increases were among the factors that caused the revolutions in Egypt, Morocco and Tunisia.[2] Moroccan households, on average, spend around 40 percent of their income on food. That figure is much higher for poorer households who may spend as much as 75 percent of their income on food.

A simple calculation would show that with an average weight of food in households' consumption basket of about 40 percent, a doubling of food prices like that which occurred in 2007–8 would lead to an almost 30 percent decline in real incomes. Such a sharp reduction in real income could be destabilizing, especially if it disproportionately affects the poor and vulnerable.

The above discussion indicates that agricultural development is an important political priority in Morocco for two reasons. First, agriculture (and the service and processing activities surrounding it) is important for increasing rural standards of living. Thus, it is an essential component of any inclusive growth strategy that aims to reduce inequality and regional disparities. Second, growth in agricultural productivity and output is a necessary component of food security strategies. It helps to reduce import dependence and increases the country's ability to deal with large swings in international food prices and their impact on the poor and vulnerable.

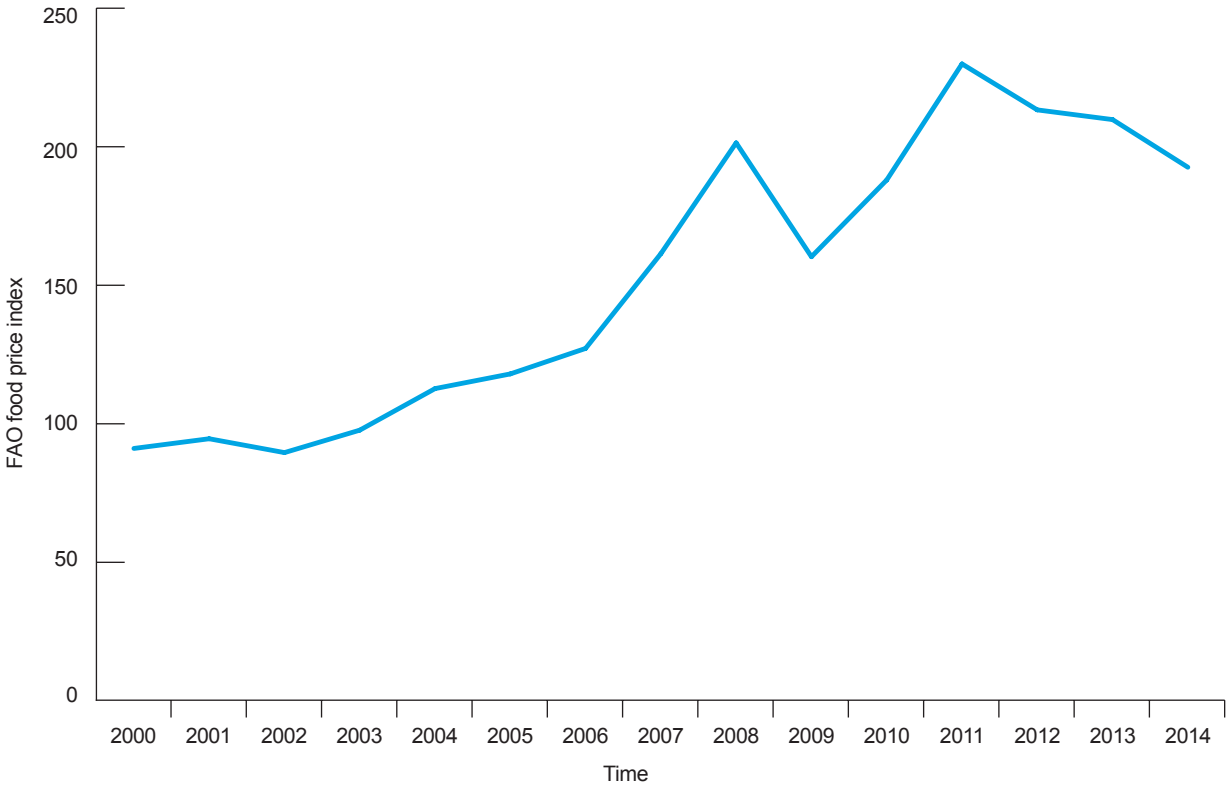
CHALLENGES FOR MOROCCAN AGRICULTURE AND FOOD SECURITY: WHAT NEEDS TO CHANGE?

The agriculture sector in Morocco is called upon to ensure food security for a growing population, while generating incomes and jobs for rural dwellers and helping reduce rural poverty. Those objectives are to be achieved under difficult circumstances. Since 2007, world food prices have been high and volatile, and medium-term projections by the Organization for Economic Cooperation and Development (OECD) and the Food and Agriculture Organization (FAO)[3] indicate that volatility is likely to continue. Moreover, climate change, and increasing temperatures and lower precipitation, risks making agriculture yields even lower and more unstable.

High and Volatile World Food Prices

Figure 1 shows that after a long period of low and relatively stable food prices, things began to change at the beginning of the 21st century as global prices rose and became more volatile. This change reflected a shift in market fundamentals. World food markets became tighter because the rate of increase in agricultural yields slowed as a result of lower investments. The annual rate of growth of global capital stock in primary agriculture fell from 1.1 percent in the period 1975-90 to 0.5 percent during 1991–2007. As a result,

Figure 1: FAO Food Price Index 2000–14



Source: FAO (2014).

productivity growth declined. For example, the rate of growth of cereal yields dropped from 3.2 percent per year in the 1960s and 1970s to 1.5 percent in 2000. At the same time, the demand for food rose due to the increase in population as well as rising incomes, which led to a shift toward consuming more meat and, hence, an increase in the demand for animal feed and the derived demand for cereals.[4]

The low level of food stocks held around the world also contributed to higher price volatility, with many public as well as private market participants reducing the size of their inventories in order to lower costs. This meant that nearly all of the adjustment to production shocks had to be made through cuts in consumption, via higher prices, rather than via reductions in stocks as was often the case in the past.

Food prices appear to have stabilized in 2013 and 2014 and even began falling as oil prices dropped. Nevertheless, many observers and international organizations still expect that food prices will remain high and volatile over the medium term.[5] They provide three main reasons for this. First, the linkage between the food and fuel markets is getting stronger as a result of the development of biofuels. Since world fuel prices tend to be more volatile, this would mean that food prices will also be more volatile. Second, climate change and the greater frequency of extreme weather occurrences could lead to more supply shocks and, hence, higher price volatility. Third, production is moving toward potentially more fragile regions, such as the Black Sea area, and world markets are becoming increasingly dependent on supply from such regions. Yields in those regions are less stable and that is causing more world price volatility.

Many observers also argue that increased "financialization" of commodity markets and the rise in speculation have contributed to higher food price volatility.[6] The returns on commodity futures seem to be negatively correlated to the returns on stocks and bonds. Thus, they are an attractive vehicle for portfolio diversification. Noncommercial actors (i.e., actors who are not involved with the physical product) doubled their share of open positions in wheat, corn and soybean futures between 2006 and 2011. The tendency of those investors to behave as a "herd" buying or selling large quantities at the same time has been blamed for magnifying changes in food prices and thus contributing to greater volatility.

Moreover, policy measures put in place by a number of governments in times of crises (such as export restrictions or hoarding) increase international price volatility. For example, according to an analysis carried out by the FAO, the sharp increase in rice prices in 2008 can be mainly attributed to government policies.[7] Changes in market fundamentals cannot explain why rice prices doubled in 2008 and, given there are virtually no forward markets for rice, nor can speculators be blamed for this episode.

High Dependence on Food Imports

High and volatile world prices pose a particular challenge to Morocco because of its high dependence on imported food. Morocco consumes more imported than domestically produced cereal, with a cereal dependency ratio[8] of 54 percent, which is more than three times higher than the world average of 16 percent. In normal times, high dependence on imported food is not necessarily a problem if the country has sufficient export revenues to cover its food import bill. Morocco spends about 20 percent of its export revenues on food imports, which is about four times higher than the world average.

High import dependence poses particular challenges in periods of high volatility on world markets. Importing

countries face two types of risks: the risk of price hikes; and the risk of a disruption in physical supply. Morocco's demand for food imports (particularly cereals) is highly inelastic, which means that it is unable to reduce imports in response to a price increase and therefore, has to bear the full impact of high prices. Moreover, in times of shortages, countries sometimes impose export bans, and food supplies are susceptible to disruption by war, civil strife and natural disasters. Thus, Morocco could face a situation where it is unable to have access to food imports at any price.

Does the above discussion mean that Morocco is food insecure? The answer is no. Food security does not require food self-sufficiency, and Morocco is able to ensure its food needs through a combination of domestic production and imports. However, it is important for Morocco to continue reviewing its agriculture policies as well as its imports and emergency food reserve strategies to ensure that food security is maintained over the medium and long term for its growing population.

Morocco's Twin Problems: Child Malnutrition and Obesity

Although vulnerable to changes on world markets, Morocco cannot be considered a food insecure country. Undernourishment, defined as inadequate caloric consumption, is not a major problem in Morocco. About 5 percent of Morocco's population is undernourished, which is disturbing, but is much lower than the average for developing countries. In fact, obesity appears to be a bigger problem in Morocco than undernourishment. More than 17 percent of Moroccans are considered obese, which is significantly higher than the world average of 11.7 percent.

While a large segment of the population is obese, another group—mainly children under 5 years old—is not receiving the necessary nutrients to grow and develop into healthy and productive adults. About 15 percent of under-5 Moroccan children are stunted (their growth is below average for their age because of nutrient deficiency) and 2.3 percent are wasted (nutrient deficiency is causing a deterioration in their bodily functions). Child malnutrition is often caused by a mother's lack of knowledge about healthy feeding rather than lack of access to food.

It is important to point out here that Morocco has made good progress over the last decade reducing child stunting from about 23 to 15 percent. However, it is clear that 15 percent is still too high, and that this effort needs to continue.

Table 1: Share of Holdings Less than 5 Hectares (%)

Column 1	Share in Total Holdings	Share in Land Area
Algeria	55.4	11.3
Egypt	98.2	70.7
Jordan	78.9	23.8
Lebanon	96.7	60.1
Morocco	69.8	23.9
Qatar	73.3	3.4
Tunisia	53.5	10.9
Yemen	93.0	43.9
Average	84.2	25.3

Source: FAO Agriculture Census Data.

The Importance of Small Family Farmers

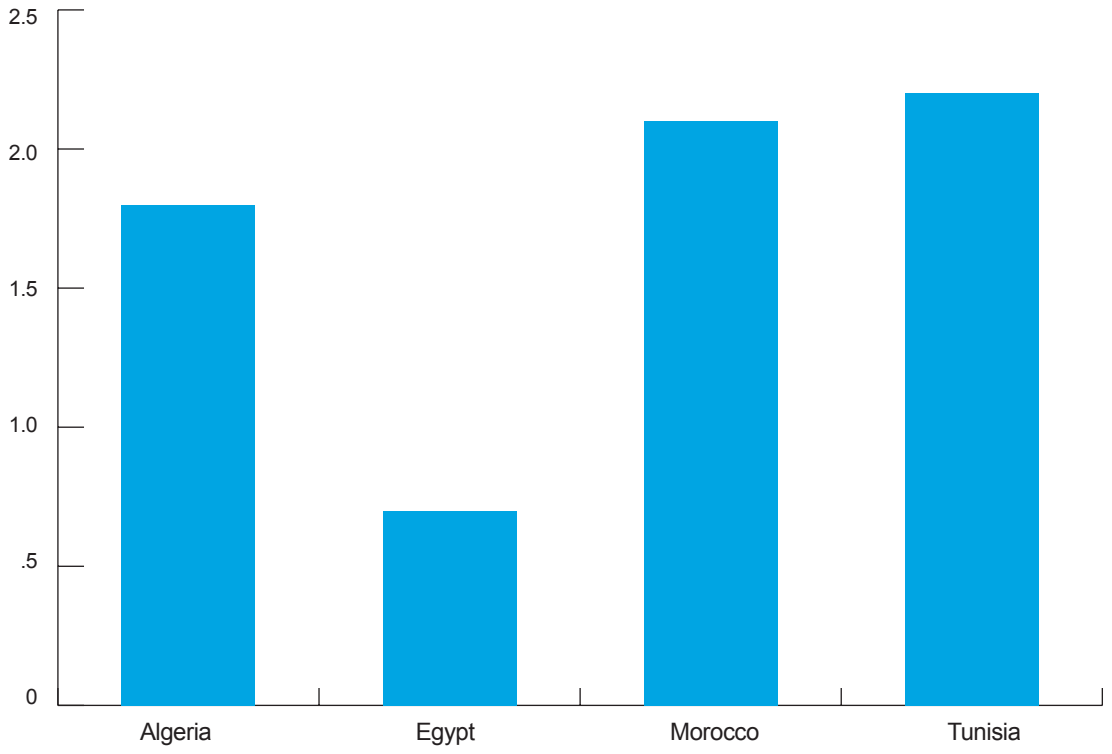
Improving nutrition and reducing dependence on imports can be partly achieved by developing domestic agriculture. The vast majority of agriculture in Morocco is under family farming, which is defined as a type

of agricultural production system managed by one or more members of a family and primarily reliant on non-wage family labor.[9] Family farming includes agricultural, forestry, fisheries, pastoral, and aquaculture activities. It is often characterized by multiple activities as the family tries to increase its income and diversify its sources to protect itself from exogenous shocks.

Family farmers are often, but not necessarily always, smallholders. However, nearly all smallholders tend to be family farmers. That is why most empirical work on the subject has used the size of land-holding as a proxy measure for family farming. Nearly 70 percent of all holdings in Morocco are less than 5 hectares and are under family farming. In fact, the average size of a family farm in Morocco is only about 2 hectares. Table 1 and Figure 2 indicate that Morocco's situation is similar to that of other Arab countries. This underlines the importance of smallholders and family farming for agricultural development and inclusive growth.

While the majority of holdings are under family farms, they only control a small proportion of total agricultural land. About 75 percent of agricultural land in Morocco is under relatively large corporate-type farming. This reflects the dualistic nature of Moroccan agriculture, where large numbers of family farms operate alongside big and more modern entities. While family farmers tend to produce for their own consumption (subsistence farming) and to sell to local markets, the large modern farms produce for national and international markets. They tend to have higher productivity

Figure 2: Average Size of Family Farms (hectares)



Source: FAO Agriculture Census Data.

and to be more profitable than small family farms. In Morocco, the average large modern farm earns about nine times more than the average family farm.

A 2007 study by the Programme RuralStruc divided Moroccan farms into three groups.[10] The first group of competitive farms controls about 22 percent of Moroccan farmland. It consists mainly of large farms and very few small and medium farms that operate in niche areas. The second group is the structurally non-competitive farms. They are basically the subsistence and micro-farms. These comprise about 600,000 units, or 41 percent of all farms in the country, but they only control 8.5 percent of farmland. The remaining medium and small farms could become competitive because they have access to good land, sufficient water and modern equipment. However, they face a host of problems that limit their ability to be profitable and to expand. These include: ambiguous land titles, poor transport and communication infrastructure, as well as lack of access to credit and to technical and marketing information.

Family farming is a major source of household employment and income in Morocco. About 10 percent of the population is engaged in family farming. This explains the importance attached to family farming in the PMV. The PMV is a strategy that tries to balance the desire to develop modern agriculture with the need to support family farmers. The strategy is built on two pillars: the first pillar aims to develop modern, high productivity agriculture through large projects built upon the concept of public-private partnership; and the second pillar aims to develop family farming through projects that are mainly government financed. This second pillar consists of 545 projects that will cost about 20 billion dirhams ($2.5 billion) over a 10-year period and that target about 950,000 farmers operating in remote and difficult areas. The projects are divided into three types: projects that replace existing crops and products with new ones that provide higher value added to the farmers; projects that enhance productivity of existing products; and projects that introduce new activities to increase family income and diversify its sources. The projects are designed jointly with the professional associations representing the beneficiaries who are also expected to participate in the project costs (about 30 percent) to ensure ownership and sustainability.

The PMV aims to increase the agricultural sector's competitiveness by shifting production to higher value added fruits and vegetables and by capitalizing on Morocco's geographic position and its proximity to European markets. It also aims to enhance intensification and raising yields through an increase in mechanization and the use of certified seeds. There has been a focus on developing and expanding high-value agri-food chains such as olives, citrus, and milk and dairy products.

Agriculture, Rural Development and Economic Inclusiveness

Agriculture's role in Morocco's economy and society is much more important than is revealed by simply looking at its share in GDP, which is 15 percent. About 40 percent of Morocco's labor force is employed in agriculture. About 43 percent of Morocco's population lives in rural areas and their livelihoods are therefore either directly or indirectly affected by agriculture. Agriculture is particularly important because it provides a livelihood for the majority of the poor. Poverty in Morocco is largely a rural phenomenon.

Opportunities for rural youth outside of agriculture are limited. Agro-industry—such as the production of olive oil and canned juices and vegetables—remains relatively underdeveloped and only contributes 5 percent of GDP. Most services are concentrated in urban centers.

Inclusive growth that improves living standards across the different regions of the country requires investments in physical infrastructure as well as in education to create greater opportunities, especially for youth. Access to physical infrastructure has been improving. About 98 percent of rural households are connected to electricity and 93 percent have access to clean drinking water. However, according to the World Bank,[11] the reliability and maintenance of those services continues to be a challenge.

Similarly, Morocco has expanded access to education but the quality of education remains unsatisfactory. Net school enrollment has increased and is currently close to 100 percent. A larger proportion of Moroccan children are going to school than ever before. However, they are not learning. According to international test results, about 75 percent of primary school students fail basic tests of mathematics. Unsurprisingly, children in remote rural areas tend to be less well served by the educational system than their urban peers. Hence, they have a harder time competing in the labor market.

The Role of Women in Moroccan Agriculture

Between 23 and 35 percent of the labor on family farms is provided by women. Moreover, the role of women in family farming is increasing, because more and more male family members are migrating to oil-rich countries and to cities in order to earn a better living and send remittances to their families who remain at home. Women are left to look after the family farm. As a result, family farming in Morocco is undergoing a process of the feminization.

It is common to observe a division of labor between men and women on the family farm. Women tend to be responsible for food production and for animal husbandry. They plant food crops for auto-consumption, and they look after small and large ruminants and specialize in the production of eggs and milk and other dairy products. They also participate with all family members in harvesting activities. They are usually helped by their children, who take small ruminants to water and pasture and work alongside their parents at harvest time.

Women suffer more than men from lack of access to land, credit and technology. Women landholders generally represent less than 5 percent of landholders in Morocco. Moreover, land fragmentation poses a special problem for women who are hampered by social norms from moving among plots that may be far from one another. Women also have even greater difficulties than men in obtaining rural credit. Often, a woman's husband must first approve the request, which may not always be forthcoming. Those who sign legally binding documents must also be literate. Older women who participate most in commercial activities and can benefit readily from micro-credit are the least likely to be literate. Women often have to form associations to obtain micro-credit. These organizational requirements can be time-consuming and often require the presence of an agent in the community.

Rural women have little access to extension services. Most extension programs lack qualified personnel and have limited capacity to mainstream gender in policies, programs and implementation strategies. The design of many extension programs has not taken women's cultural and time constraints into account. Consequently, women's opportunities to express their needs and to have them met are more limited than those of men. Finally, research and extension work tend to focus on cash crops rather than subsistence food crops that women grow and own. Although women play a preponderant role in all forms of animal husbandry, including raising small ruminants, caring for cows and the preparation of all milk products, extension services for women rarely focus on those activities.

A STRATEGY FOR FOOD AND NUTRITION SECURITY AND RURAL DEVELOPMENT

Morocco can improve food and nutrition security, and at the same time reduce rural poverty and make growth more inclusive by: increasing food reserves and using financial markets for risk reduction, increasing support to smallholders and family farmers to link them to markets and thus increase domestic food production while raising their incomes, supporting the development of independent producer organizations that provide voice for smallholders and also help them gain better access to input and output markets, and introducing social protection systems that target the rural poor through conditional or unconditional cash transfers.

Increasing Food Reserves and Using Financial Markets for Risk Reduction

Morocco will continue to be highly dependent on food imports for the foreseeable future. This should not be a problem as long as the country continues to generate sufficient export revenues to cover its import bills. In fact, it often makes more sense for a country to export high-value agricultural products and use part of the export proceeds to import lower-value food commodities.

However, Morocco still needs to develop import strategies to protect its food security in a world of high and volatile prices. Holding larger physical food reserves is one possible option. Countries need to maintain food security emergency reserves to assist the most vulnerable without disrupting normal private sector market development, which is needed for long-term food security. The size of such emergency reserves depends upon specific country circumstances. Holding food stocks can be expensive. The FAO and the World Bank estimate that storage of one metric ton of wheat costs $2.15 per month. Therefore, there is a need to weigh the costs and benefits of holding larger emergency reserves.

Another area that deserves special attention is the use of financial markets for risk reduction. Countries around the world are increasingly using financial risk hedging instruments to insure against volatility—for example, Mexico has used such instruments to fix the price of its corn imports and avoid another “tortilla crisis.” Future contracts are one way of managing commodity price risk. They require the buyer to purchase a fixed quantity at a fixed price at a predetermined future date. Buyers need to obtain credit or guarantees to cover the value of this contract.

Another alternative is to use option contracts. These contracts give the buyer the right, but not the obligation, to purchase a fixed quantity of a commodity at a fixed price at some future date. They act like an insurance against high prices because if prices fall, the buyer can decide not to use the option and thus only lose the premium which is paid up front in cash. A famous example of the use of options comes from Malawi, which bought options to purchase maize in 2005. The price of maize increased and Malawi exercised the option, saving about $5 million.

Increasing Domestic Production by Supporting Smallholders and Family Farmers and Linking Them to National and International Markets

Vulnerability to international market volatility could also be lowered by reducing dependence on those markets through higher domestic production. Since most food in Morocco is produced by smallholders and family farmers, increasing food production would imply helping those small producers increase their productivity. This is particularly true since yields on small farms

are often lower than those on large modern farms. By supporting small family farmers, governments would be fighting rural poverty and making economic growth more inclusive while reducing import dependence and enhancing food security.

Increasing support to small family farmers does not mean ignoring large modern farms. Both are important for growth and food security. Smallholders tend to face greater challenges than large farms. That is why they may require greater government support in order to level the playing field.

Table 2 shows yields per hectare for major groups of food products in Morocco as well as the world average. It indicates that, with the exception of vegetable production, yields in Morocco are lower than world averages. For example, cereal yields in Morocco are around 16 hectogram (hg)/hectare (ha) while the world average is about 36 hg/ha. This yield gap could be considered "good news" as it means that there is room for higher production. On the other hand, those low yields also reflect water scarcity and difficult climatic conditions that may be hard to resolve.

In addition to enhancing food security, raising smallholder productivity (and hence their income) will help reduce rural poverty and make economic growth more inclusive and equitable. There are six areas where the government could intervene to support small family farmers and help increase their yields: (1) linking small farmers to domestic and international markets and helping increase their share in value added; (2) adapting financial and investment services to the needs of small family farmers; (3) securing land titles; (4) increasing investment in research and extension and adapting them to the needs of smallholders; (5) helping farmers adapt to climate change; and (6) launching special programs for women farmers and youth.

Linking small farmers to national and international markets. Linking farmers to markets is essential to raising their productivity and standards of living. Raising their share in value added is an important way to improve family farmers' incomes. Family farmers tend to retain a very small share of value added from their products.

New marketing techniques need to be introduced to reduce the role of intermediaries in the marketing process through a better organization of family farmers. For example, the government can help promote the products of family farms through special labels and information campaigns about the benefits of consuming local products. Moreover, family farmers' incomes can be raised by establishing linkages between family farmers and small- and medium-sized enterprises to process the farmers' products, or with traders to link farmers with national and international markets. Such linkages could be through arrangements where a buyer or an agro-processor ensures smallholders' access to technology and necessary inputs, and also facilitate marketing of the final product. Those ar-

Table 2: Yields of Major Crops (hectogram (hg)/hectare (ha))

	Cereals	Oil Crops	Vegetables	Fruits
Morocco	16.1	3.6	292	99.5
World	36.6	6.4	192	112.6

Source: FAOSTAT (2014).

rangements could take the form of contract farming or out-grower schemes.

Experience indicates that, in order to fully benefit from market linkages, smallholders need to become more competitive, which in turn requires better access to financing, to land and to technology. It also requires special measures to adapt to climate change and to support youth and women farmers.

Improving financial and investment services. Access to financing and investment resources is perhaps the most important constraint facing family farmers. Credit to agriculture in Morocco is about 7.4 percent of agricultural GDP, while overall credit to the economy is 65 percent of total GDP. This shows that agriculture's share of financing is extremely low compared to agriculture's contribution to the economy. Agriculture's share of credit (adjusted for its contribution to GDP) is nearly nine times less than the average for the whole economy.

This analysis probably underestimates the magnitude of the problem facing family farmers because a large proportion of agricultural credit goes to big modern farms. Nevertheless, the data confirms that access to financing is a major constraint facing family farmers. Even if one assumes that all the credit to agriculture is going to family farmers, one would still conclude that they are grossly underserved by the financial system compared to other sectors of the economy.

Existing financial institutions, credit instruments and bank procedures are ill-adapted to the needs of family farmers. Farmers are not able to provide the kind of guarantees that banks require to lend, since many family farmers do not have notarized land titles. The amounts of credit required by individual family farmers are usually small and are not of interest to banks. Moreover, many banks consider agriculture to be too risky and prefer not to lend to it. To deal with similar situations, other countries have created new institutions or reinforced existing ones with simplified lending procedures that are adapted to the realities of family farmers; put in place government lines of credit to encourage banks to lend to family farmers; developed insurance and guarantee facilities to reduce the risk of lending to agriculture; and encouraged the development and expansion of rural microcredit facilities as well as farmer-centered financial institutions (where farmers have a stake in these institutions). There is also a need to increase public investment in agriculture and in rural areas to build the social and physical infrastructure necessary for the development of family farming.

There are several examples from Arab countries of initiatives to enhance financing for smallholders and family farmers. Sudan created a Micro Finance Development Facility, which is owned by the Central Bank and the Ministry of Finance and is mainly funded from donor resources. It has supported the creation of 16 new microfinance institutions and has reached nearly half a million beneficiaries. About 80 percent of funding under this program is directed to agriculture activities. It funds small investments by family farmers and gives special preference to women and young graduates from agriculture and veterinary colleges.

Lebanon's Disaster Fund for Agriculture is an example of an initiative in the area of providing guarantees and reducing the riskiness of family farming. Half of the resources for this fund are provided by the government and the other half by the farmers themselves. The idea is to provide financial compensation to farms suffering from bad weather conditions or other types of natural disasters. By reducing farmers' risks, the creation of this fund also helps them obtain credit.

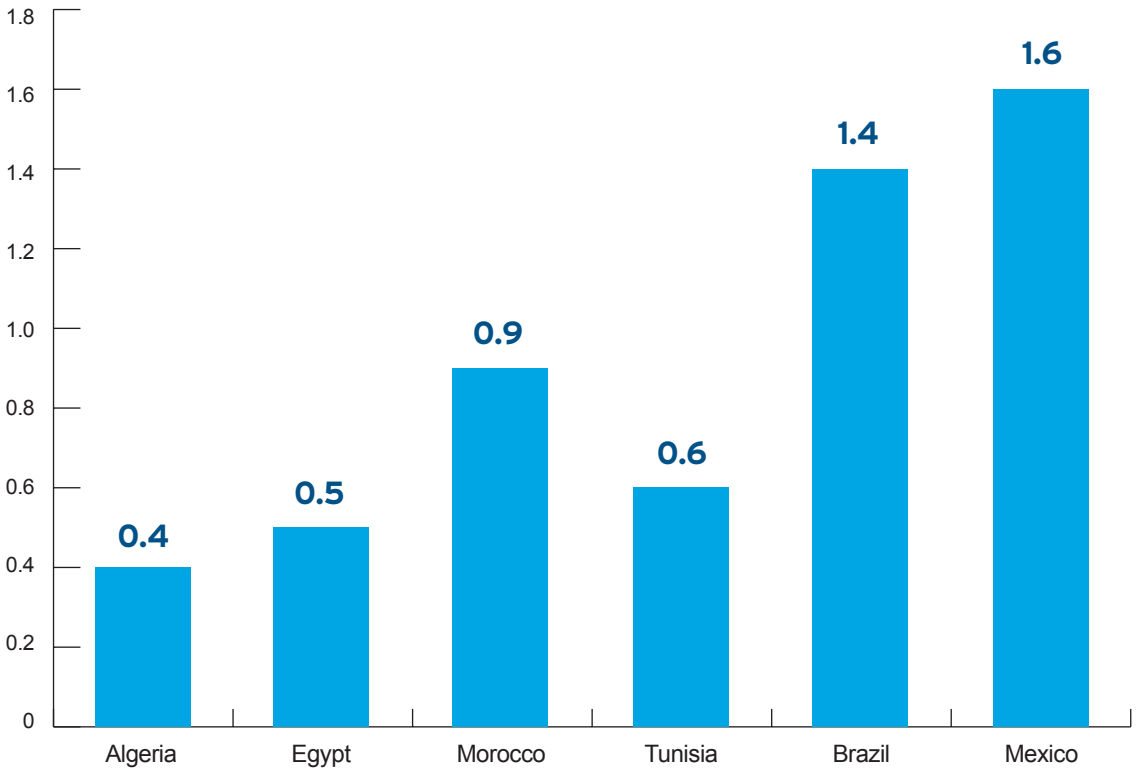
Securing access to land. Access to land is another important issue for small family farmers. As was

stated earlier, the average size of a family farm in Morocco is only about 2 hectares. Moreover, this average size is decreasing steadily as a result of population increase. The application of inheritance laws that divide land among surviving children and the absence of well-functioning land markets that allow consolidation compound the problem. The small size of family farms complicates their access to technology, inputs and markets.

Many family farmers in Morocco do not have a title to their very small holdings. In addition to making it difficult for family farmers to obtain credit, uncertainty about their ownership of land discourages them from investing. Therefore, governments could help boost investment in agriculture by facilitating land titling for farmers, and in some cases distributing public and collective land to small family farmers. It is also recommended that laws and regulations be amended to protect the rights of small tenants.

Adapting research and extension services to the needs of small farmers. Research and extension services should adapt to the needs of family farmers. Productivity of Moroccan family farmers is lagging partly because of lack of access to appropriate modern technology. National institutions need to carry out their own agricultural research in order to adapt existing knowledge and techniques to local ecological, social and economic realities. Many studies show that the return to investment in agricultural research is typically very high, estimated at 36 percent for Arab countries.

Figure 3: Investment in Agricultural Research as a % of Agricultural GDP



Source: FAO, IFAD and World Bank Joint Report on Food Security in the Arab World (2009).

However, as is shown in Figure 3, at 0.9 percent of agricultural GDP, Morocco's investment in research, while higher than other North African countries, is far below the rate of about 2.4 percent observed in OECD countries and the 1.5 percent observed in successful Latin American countries.

Perhaps more important, extension services in Morocco are poorly funded and therefore ineffective. Moreover, extension workers are often not trained to communicate with family farmers and end up delivering information in a manner that is not convincing or helpful to the farmers. This appears to be a problem across the Arab world. For example, a recent study in Jordan compared the productivity of olive farmers who received support from extension services with those who received no support.[12] It concluded that receiving support from extension services had no impact on productivity. This implies that even when research is carried out successfully, its results are not adequately transmitted to small family farmers.

It appears that there is a need to consider innovative types of research and extension institutions as well as new instruments for delivering information to family farmers. Innovative extension systems put family farmers at the center and do not consider them as mere end receivers. New institutions could be based on government partnerships with the private sector, family farmer-producer organizations and with civil society. Many civil society organizations have earned the trust of family farmers, because they have deep knowledge of the sector and long experience working with family farmers. They increasingly use modern technologies and ICT such as mobile phones and the Internet to deliver information to family farmers.

Adapting to climate change. Better research and extension services are especially needed to help family farmers adapt to the impact of climate change. North Africa is heavily affected by climate change and it is considered a climate change hotspot. According to the most recent research, temperatures in the region could rise on average by 3 degrees Celsius by 2050, with rain water declining by about 10 percent and demand for water rising by 60 percent during the same period. Moreover, the rise in sea levels would have strong effects on low-lying areas, increasing land salinity and contaminating underground water resources.

Higher temperatures, less rainfall and increased land salinity in a country that is already suffering from insufficient water resources do not augur well for the future of agriculture, unless urgent action is taken now. Family farmers should be at the center of action to adapt to climate change. They are the largest food producers and creators of rural employment, and at the same time their small size and lack of investment resources make them particularly vulnerable to climate change impacts and other types of shocks.

Some farmers are already adapting to higher temperatures by adjusting planting schedules. Research and extension can be helpful here by introducing new varieties that are more heat-resistant and by informing farmers about new cropping patterns to reflect changes in climatic conditions. Morocco's biggest challenge will continue to be dealing with water shortages. Here, again, research and extension can play an important role by introducing more drought resistant varieties. This needs to be accompanied by new investments in better irrigation systems to avoid water wastage and to ensure the most efficient use of limited water resources.

Supporting women farmers. Given their important role in agriculture and food and nutrition security, particular attention needs to be paid to the needs of women farm-

ers.[13] The government could consider a three-pronged approach to support women farmers. First, existing laws on access to land and to credit need to be reviewed and wherever appropriate revised to remove biases against women farmers. Moreover, many existing procedures, particularly those regulating titling land as well as obtaining microfinance need to be revised and simplified to reflect the realities of rural women. Second, the government could put in place special programs to provide financial services for rural women, such as an "agricultural women's bank" that would specialize in working with women farmers and catering to their banking needs. Third, extension services and programs need to be revised in order to better reflect the increased feminization of family farming. For example, Sudan has developed Women Farmer Schools. This is a program that caters to the needs of rural women and includes sharing information on health and nutrition issues as well as on agricultural production and animal husbandry.

Implementing special programs for rural youth. Youth employment is a major challenge facing all North African countries, with youth unemployment rates of around 25 percent. Youth are increasingly losing interest in agriculture and are looking for jobs in urban areas. This is putting pressure on urban infrastructure, and is depriving rural areas and family farms of important labor resources that are generally more educated and dynamic than their parents. The availability of adequate goods and services and job opportunities would convince more youth to stay closer to the family farm.

There are two types of action that can be pursued to encourage youth to remain in rural areas and in agriculture. First, the government needs to invest more in rural infrastructure to attract new businesses and create more opportunities for off-farm employment. Youth would benefit from the opportunity of an off-farm job that allows them to also continue supporting the family farm. Second, there is a need to develop programs and projects that target young farmers specifically and provide them with privileged access to land, credit and technical knowledge.

Supporting Inclusive Producer Organizations

Producer organizations and cooperatives can play an important role in strengthening the governance system of the agriculture sector, and particularly in developing and supporting family farmers and, therefore, in increasing the productivity of this sector. Problems caused by the large number of very small dispersed family farms in Morocco can be tackled through the development of strong producer organizations that group farmers together to ensure that their voice is heard in policy discussions, and also help enhance access to technology, input and output markets, information, communication and natural resources. Compared to other regions with similar per capita incomes (e.g., Latin America, or East Asia), Moroccan producer organizations, as well as other civil society organizations that operate in rural areas, are still quite weak and do not yet fully play their roles in support of family farming.

Producer organizations and cooperatives should also play an important economic role, grouping family farmers together to enhance their access to technology and inputs, and to improve market access and help them retain a larger share of value added. Producer organizations could encourage the exchange of experience and know-how between farmers. They could also propose and encourage programs for applied agricultural research that support family farmers, and help improve extension services and adapt them to the needs of family farmers. In fact, civil society organizations, including producer organizations and cooperatives, are often much bet-

ter placed than government agencies to deliver extension and technical support to family farmers.

The government needs to support producer organizations, cooperatives and other civil society organizations working with family farmers, and to ensure their political and financial independence. This may require an enabling environment that would entail legal and policy changes that provide more autonomy to civil society organizations, moves them out of government control, and provides them with greater financial and operational freedom. It will also require a change in the current bureaucratic and political culture away from centralized control and towards a much more decentralized and participatory system of governance. Governments should regularly invite producer organizations and cooperative representatives to participate as equal partners in the formulation and implementation of policies and development programs.

Morocco can learn from Latin America's experience in this area. Brazil provides an example of public-civil society partnership for food security.[14] When Luis Ignacio Lula da Silva was elected president of Brazil, fighting hunger was one of his top priorities for achieving social justice. Therefore, he created a National Food and Nutritional Security Council (Consea), which is a good example of an inclusive economic institution. It had 59 members, 17 government representatives and 42 members from civil society representing small farmers as well as the poor and food insecure, and was chaired by a civil-society representative. The council met on the premises of the presidency and made their recommendations directly to President Lula. Because the problem of hunger is inter-sectoral in nature the council had a broad membership so that all sectors of the economy were represented. Consea was also conceived as a tool to provide voice for those suffering from hunger and to improve cooperation between government and civil society. Under Consea and President Lula, Brazil was extremely successful in eliminating hunger.

CONCLUSION

Morocco is considered a success story in the Arab world. It has maintained stable economic growth while gradually implementing democratic reforms. Greater inclusiveness so that all Moroccans share in the benefits of economic growth would help ensure continued success and economic and social stability. This paper argues that the objective of inclusive growth is linked to that of food and nutrition security. Economic inclusion and poverty reduction require support to smallholder and family farmers who represent most of the poor in Morocco. At the same time, supporting those farmers and enhancing their productivity and their linkage to markets can lead to increased food production and improved food and nutrition security.

The Government of Morocco is aware of the importance of smallholder farming, and the PMV has a pillar that focusses on their needs. The analysis in this paper supports the emphasis of the PMV's second pillar. It argues that the twin objectives of inclusive growth and food and nutrition security could be achieved by adopting an approach that includes: (1) increasing food reserves and using financial markets for risk reduction, (2) improving the linkage of smallholders and family farmers to markets and helping them increase domestic food production while raising their incomes, and (3) supporting the development of independent producer organizations that provide voice for smallholders and also help them gain better access to input and output markets.

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ENDNOTES

1. World Bank (2014).
2. For example, see AfDB (2012).
3. See FAO and OECD (2010)
4. See FAO (2012).
5. For example, see OECD and FAO (2010).
6. For example, see Prakash (2011).
7. See Dawe (2010).
8. Cereal dependency ratio is defined as the ratio of imported cereal to total cereal consumption.
9. See Abaab et al. (2000).
10. See Programme RuralStruc (2007).
11. World Bank (2014).
12. See Al-Sharafat et al. (2012).
13. See FAO (2011).
14. See Da Silva et al. (2011).

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