

# The difficult escape from dualism: The Green Morocco Plan at a crossroads<sup>1</sup>

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## **Abstract**

*This article analyses the development effects of a foreign-owned almond farm in Morocco from the perspective of its role in affecting the dualism present in the Moroccan agricultural sector. The farm was situated on lands owned by the State, leased under the framework of the Green Morocco Plan and aimed at developing the country's agriculture. The Spanish-owned farm matches the criteria of agricultural production that Moroccan authorities hoped to expand according to this plan. Therefore, it is used here as an example to understand and reflect on how the Green Morocco Plan has been confronting the dualistic nature of the Moroccan agricultural sector.*

**Keywords:** *Development, Morocco, Agriculture, Green Morocco Plan, Dualism.*

## **1. Introduction**

Morocco adopted its first Structural Adjustment Plan in 1983 and began a process of economic transformation based on liberalization, a greater role for the private sector, and integration into the world economy. During the 1990s, the country attracted 40% to 50% of all investment inflows to the North Africa region, obtaining significant support from foreign investors for its adjustment policies. During the 2000s, Morocco issued several sector-specific plans aimed at boosting economic growth, increasing competitiveness and exports, and diversifying economic activities. These strategies covered key sectors including tourism, industry, and

agriculture, and all sought to attract foreign investment as a means to achieve economic goals.

Despite this, according to the UNDP (2016), Morocco continues to exhibit persistent poverty and acute inequality, even by Arab region standards. These problems affect mainly rural areas, while the benefits of economic modernization have concentrated into urban Morocco. According to the Moroccan High Commission for Human Development, rural areas account for 70% of poverty in the country, and the Ministry of Agriculture and Fisheries states that more than 80% of revenue in rural areas derives directly from agriculture. This sector accounts for 42% of national employment, but only 14% of national income.

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In this context, a strategy for agricultural development known as the Green Morocco Plan (GMP) was advanced by the Agency for Agricultural Development under the umbrella of the Moroccan Ministry of Agriculture and Fisheries. The Green Morocco Plan acknowledges the problem of duality in the country's agricultural sector, yet it encourages bipolar development of that sector by way of two sets of measures (or pillars) and therefore may be working at cross-purposes. Pillar I of the GMP aims at developing high-performance agriculture, adapted to international market competition by means of stimuli to private investment. Pillar II consists of combating poverty via the promotion of solidarity projects meant to increase the income of the most vulnerable farmers, particularly in sensitive areas.

This leads to a first (general and academic) question of how to combat dualism in developing countries with extensive and underproductive agricultural sectors. More specifically, we wonder whether measures adopted under the GMP in order to combat dualistic development (evident in Morocco) are aligned with the specific objectives on confronting dualism stated by the same plan. Through analysis of the features and performance of a specific almond farm, we intend to contribute to the literature on dualism and, more specifically, to the study of the GMP.

As explained in Sections 1 and 2 of this paper, GMP Pillar I might appear to be consistent with Arthur Lewis' seminal works on dualism and development, as it encourages the kind of vibrant capitalist sector that might progressively concentrate resources, reduce the size of the subsistence sector, and overcome persistent duality. However, through analysis of a specific agricultural investment matching the GMP criteria of high performance and international competitiveness in agriculture, this paper reveals that the logic underlying the plan ignores much of what is known about development economics and dualistic economies, including Lewisian theory. In Section 3, we make explicit our methods of analysis and address controversies around the use of single case studies with theoretical purposes. In Section 4 we present the case study of the almond farm, and in the final section we offer our conclusions.

## 2. Dualism in academic literature

Dualism was first characterized by Lewis (1954) in a seminal piece that also became a milestone in the foundation of development economics as an academic discipline. From his point of view, economic structures in developing countries can be easily categorized into two distinctive groups: (i) a capitalist sector that is generally industrial, dynamic, labour-demanding, and comparatively productive; and (ii) a subsistence sector that is agricultural and/or artisanal, informal, and comparatively unproductive. Later, Kirkpatrick and Barrientos (2004) and Gollin (2014) underlined that Lewis' division was based on productivity gaps and labour differences, suggesting that this was not necessarily an industrial/agricultural divide.

According to Lewis, economic development will be triggered as a result of demand for labour by a vibrant capitalist sector; the required labour force will be transferred from subsistence to the capitalist sector (a process typical to rural exodus, if the capitalist sector is industrial). This will lead to economic growth and job creation in the industrial sector, along with increased productivity in the subsistence sector (where similar economic activity can be easily achieved with a smaller labour force). Total productivity increases will be registered in the overall economy (as the productive industrial sector grows within the economy, and as agriculture becomes more productive).

In parallel to this approach to economic development, the Latin American structuralist school has taken a fairly different view of the same phenomenon. Structuralism likewise acknowledges the structural differences within developing countries (for instance, between the agricultural and industrial sectors) (Prebisch, 1950). However, from the structuralist point of view, this gap results from a similar gap at the international level, between rich and poor countries. The internal productivity gap is partly the result of an outward-oriented economy, where the capitalist sector (which shares features with Lewis' description) is connected to an international capitalist sector (mostly controlled by rich countries), while the subsistence sector (which is disconnected and unproductive) lags behind. Moreover, unlike in Lewisian postulates, the possibility that the capitalist sector

may be the agricultural sector itself becomes a major characteristic (this being the case in most Latin American countries, and in the Moroccan economy), so that the gap characterizing a dual economy occurs *within* the rural sector (and not as industrial/urban versus agricultural/rural). As a result, according to the structuralist view on dualism, the very nature of dualism inhibits the triggering of a development process: the subsistence and capitalist sectors are not connected.

This disconnection can occur in different (non-exclusive) realms: the modern sector might have no productive linkages with other domestic sectors (whether as providers or as buyers), which would prevent technological transfers via such linkages. Elsewhere, productive linkages might exist but not trigger technological transfers. Moreover, due to its own low labour intensity in economic activity, the capitalist sector itself might function as an enclave that demands no labour from the subsistence sector.

Lewis' model has been criticized on several fronts (Hosseini, 2012), including on grounds that the author did not consider the possibility that earnings in the modern sector would be invested abroad. Although the canonical version of Lewis' model applies to closed economies, Lewis himself (1954) did foresee different implications, in terms of dualism, in the event of the opening of an economy. In one such scenario, where a developing country exports basic goods and imports capital (via that same exporter), the formation of enclaves was deemed a very likely result. In this sense, there may be a kind of consensus among development economists around the risk of persistent dualism in the form of such enclaves (units domestically isolated from the point of view of their productive linkages, technological transfers, or labour demand).

The Lewis model has been empirically tested in various developing contexts. For instance, according to Bourguignon and Morrisson (1988), increasing rural productivity in developing countries has been a major element for decreasing inequality. In the case of Thailand, according to

Jitsuchon (2014), rural-to-urban migration does not fit into Lewis' model. In Mexico, Hernández Laos and Velázquez Roa (2003) find evidence of persistent and even worsening dualism in the context of globalization. In this case, the traditional sector is comprised by agricultural activities as well as construction, while the modern sector is composed of mining (oil extraction), manufactures, power distribution, and financial services. Laterza (2016) also finds evidence of Lewis-type dualism in the Swazi economy and adds a racial divide to the set of capitalist-subsistence gaps: white employees tend to nurture the capitalist sector, while the subsistence sector is more intensive in black workers.

Barbier and Bugas (2014) add an additional problem to the phenomenon of dualistic rural economies in Latin American. In that region, the risk of Dutch disease associated with commodities booms leads to increased productivity in rural sectors (merely as a result of increased sale prices, with no associated innovations), and this hinders a process of structural transformation.

Despite the flaws highlighted above, the dualistic postulate for open economies seems a suitable approach for analysing the transformations occurring in the Moroccan rural sector, given that sector's high contribution to GDP and its abundant workforce, low productivity, and co-existence with a modern capitalist sector.

### 3. The Green Morocco Plan

Faysee (2015:2) considers the Green Morocco Plan<sup>2</sup> to be a «strong come-back of the state via both an ambitious strategy and increased resources». From the time of national independence to the 1980s, the state was actively involved in agricultural development, not only through provision of infrastructures but by promotion of agricultural production in specific sectors and regions, often by means of state-owned farms. During the 1980s, structural adjustment policies led the Moroccan government to dismantle those structures and allow private actors to enter the

<sup>2</sup> Several institutions have presented the main features of the plan on their web pages (see, for instance, [www.ada.gov.ma/StrategiePM.php](http://www.ada.gov.ma/StrategiePM.php)). These institutions refer to the GMP when presenting specific policy actions, such as tenders, grants, infrastructures, etc.

Table 1 - Challenges for agricultural development according to the GMP.

The two sectors	<ul style="list-style-type: none"> <li>- Only 18% of farmers have access to bank loans.</li> <li>- 70% of farms are smaller than 5 hectares.</li> </ul>
Revenue	<ul style="list-style-type: none"> <li>- The income of 80% of the rural population (14 million) depends on agriculture.</li> <li>- Due to land fragmentation and the predominance of cereals, the income of the rural population remains low.</li> </ul>
Productivity	<ul style="list-style-type: none"> <li>- Agro-food carries a negative trade balance (-2,000 million Dirham, excluding fishing).</li> <li>- Unstable production, due to seasonality and climatology, with an estimated impact of 14% of GDP.</li> </ul>
Employment and resource allocation	<ul style="list-style-type: none"> <li>- Low investment. Mechanization in Morocco is 11 times lower than in Spain.</li> <li>- Significant impact of seasonality in employment (agriculture accounts for 42% of total employment).</li> <li>- 80% to 90% of water is directed to agricultural uses. Inefficient irrigation systems.</li> <li>- 75% of land is allocated to cereal production, with only 10% to 15% turnover and 5% to 10% employment within the agricultural sector.</li> </ul>

Source: Own elaboration, based on Green Morocco Plan. Data available at [www.ada.gov.ma](http://www.ada.gov.ma).

sector through tenders. At that time, trade liberalization (framed under the Euro-Mediterranean Association) was seen as an opportunity for attracting investments oriented to EU markets.

For this reason, the GMP was issued in 2008 with the aim of re-shaping the Moroccan agricultural supply, and an increase in public resources toward that purpose was also announced; this was regarded as a return to state-fostered productive activities. However, as Faysee remarks, while public intervention during the 20th century was instituted from the top down, the new tools inherent in the GMP are meant to support bottom-up activities.

Faysee (2015) further points out the propriety of the GMP to a dual agricultural structure: it aims to create agricultural enterprises in both favourable and unfavourable areas, to achieve the professionalization of small and medium farms. It also focuses on agricultural value chains and their coordination, and it aims to identify stakeholders with the capacity to lead, and especially to support small-scale farms.

Arguing to the contrary, Akesby (2012) and Mahdi (2014) consider the GMP to be a plan that reinforces the dualistic nature of Morocco's agricultural sector through its focus on modern agriculture for a few and its bias toward large-sized farms, which could destabilize family-run agriculture.

In either case, the GMP acknowledges the dualistic features of Morocco's rural sector as it links the challenges of the agricultural sector to modernization of the dominant subsistence sector (Table 1).

Regarding the provision of agricultural goods, this plan illustrates the country's concerns about the instability of a sector highly affected by rainfall. Agricultural production in Morocco represents 14% of GDP, which is a very high rate even compared to other North African countries. Variations in crops have a significant impact on overall economic growth in Morocco, and this has a relevant social effect via rises in food prizes.

Another social implication of agricultural activities, according to the GMP, is their importance in terms of employment. As mentioned above, agriculture accounts for 42% of employment in the country, and families living beneath the poverty line obtain 82% of their revenue from the sector. Therefore, the GMP sets another goal consisting in the stabilization and increase of income obtained by farmers, as a means to tackle poverty, especially in central areas of the country. In this sense, the plan is targeting one of the symptoms of a dual economy: comparatively low wages and earnings in the traditional subsistence sector.

Despite the share of the agricultural sector in Morocco's production and employment, the GMP also takes into account that the agricul-

tural trade balance of the country is negative, highlighting the need for increased productivity (another element of the dual model). The sector needs to be further modernized with regard to its use of water, being currently responsible for 80% of national water consumption but nonetheless failing to ensure stable production.

Furthermore, documents derived from the GMP compare Morocco with Spain and note that, while the European country adds 100% of value to its agro-food products through industrial transformation, Morocco's industrial added value to food products reaches only 33%. The plan finds this difference illustrative of one way to foster structural change (away from the agricultural sector) in the Moroccan economy.

As highlighted by Faysee (2012), the GMP links this sort of low performance to a dual farming structure, with traditional farms representing the vast majority and with only a few modern agricultural enterprises. The rationale of the GMP is to escape the dual structure of the sector by providing tailored support to both kinds of farms.

In order to do so, the GMP differentiates two implementation strategies ("pillars") depending on the type of farmers involved. The first pillar involves modern companies, and its objective is the creation of internationally competitive agricultural "poles". The second pillar involves smallholder agriculture, and its goal is to improve livelihoods and to eradicate poverty in rural areas.

As per the Agency for Agricultural Development (*Agence pour le Développement Agricole*, or ADA), Pillar I therefore relies on an increase of private investment, both domestic and foreign. By means of international tenders, private investors commit to implementing agricultural and/or agro-industrial projects. Then, following an assessment of economic viability and technical adaptation to the agricultural potential of the area, the ADA offers investors long-term tenancy on state-owned lands at a reduced price.

The ADA has two additional tools for putting Pillar I in place: contract programs and aggregation projects. A contract program is a series of actions to improve the organization, production,

and productivity of a value chain over a period of 7 to 10 years. Each contract defines the responsibilities of the actors in the chain (and those of the state) in carrying out the planned actions. An aggregation project is where an actor from an agricultural value chain that is deemed to hold a leading competitive position takes responsibility for supporting the production of a group of farmers, and for purchasing their products.

All three of the actions under Pillar I concentrate on areas identified as "agro-poles" (the potential capitalist sector, following Lewis' definition). They meet certain natural conditions and benefit from public infrastructure investments, mainly in terms of irrigation.

Therefore, it could be said that the first two tools (international tenders and contract programs) are meant to create or nurture the capitalist sector (again, in Lewis' terms), while the third tool (aggregation projects) is aimed at favouring a spill-over of gains in the capitalist sector to the subsistence sector, so that Lewis' virtuous circle of dualism and development is triggered.

Pillar II projects, on the other hand, are mainly grants paid for by the ADA, and these concentrate on the diversification and modernization of small-scale agriculture, which often entails the setting up of cooperatives and farm associations. These belong to a category of projects labelled by the ADA as "solidarity agriculture", and they often obtain the support of international development agencies, Belgian cooperation being their first supporter.

In a word, while Pillar I targets the capitalist sector and the spilling over of its economic dynamism to the subsistence sector, Pillar II actions are oriented toward the traditional sector.

## 4. Methodology

### 4.1. Case studies and theoretical reflections

In the following section, we look at a Spanish<sup>3</sup> company that is connected to international markets, that uses water efficiently, and that is introducing capital-intense techniques along

<sup>3</sup> Spain is often used as the benchmark for Moroccan agriculture in official presentations of the GMP, not only for its proximity, but also because of its comparatively high performance in similar physical contexts. Nevertheless,



with certain industrial activities into its production chain. It is a case that matches the defining features of the Lewis' capitalist sector – comparatively productive, creating jobs, offering high wages and therefore increasing income – as well as those of companies targeted in the GMP. It is therefore a paradigmatic case for new agricultural investments fostered by the GMP.

As explained by Flyvbjerg (2006), paradigmatic case studies have a prototypical value, meaning they help to better understand a prototype or, in Weberian terms, an ideal type. As argued by Venesson (2008), case studies tend to focus on theoretical categories rather than specific bodies of evidence.

Theory-building case studies represent a qualitative research technique often used in social sciences (Levi, 2008; Venesson, 2008; Bengtsson and Hertting, 2013). In the field of transnational company studies, Rugraff, Sánchez-Ancochea and Sumner (2009) make a strong case for the use of single-unit research to explore theories on the developmental effects of TNCs. In more general terms, case studies are often used to improve understanding of the behaviour of companies. Eisenhardt (1989) argues that such case studies must be evaluated as part of the process of inducting theory, rather than as hypothesis-testing research.

The case of capitalist agriculture described in this document is used to reflect on the difficulties of reducing the gap between the modern/capitalist and traditional/subsistence sectors. In other words, it does not provide general evidence on the capitalist agricultural sector in Morocco, nor does it measure the actual and overall performance of the GMP.

#### **4.2. Why not a quantitative analysis on the impact of the GMP?**

In addition to reviewing the theory that underlies the GMP, it would be relevant to test

whether the plan has produced expected results in coping with dualism at a country scale. Doing so would demand a different methodological approach (for instance, a large-N analysis testing the correlation between the actual implementation of GMP Pillar I and the evolution of the agricultural subsistence sector). Unfortunately, a quantitative test of theories on Moroccan agriculture is not possible with the available data. Neither do the Moroccan statistical services disaggregate data for this sector, as they have done for data on the industrial sector; nor does the agricultural agency (ADA) disclose information on its land-leasing operations.

Despite the intentions of the paper, this limitation inevitably leads to the question of whether the conclusions reached around this particular case can be generalized to other investments facilitated by the GMP. Conclusions from a single case study are sometimes generalized to a larger number, according to Bengtsson and Hertting (2013), by means of “rationalistic generalization”. This logic of inference relies on expectations about similar mechanisms operating in similar contexts. Once our research question on the underlying theory of the GMP has been answered, we will briefly address the question of the real effects of the GMP on duality at the sector level.

#### **4.3. Data and techniques**

Both qualitative and quantitative information on labour, production, wages, and sales for this investment project have been collected on the basis of a questionnaire (Annex A) and a guide for providing information (Annex B)<sup>4</sup>. The process for data collection was as follows: (I) an initial meeting with an executive from the company in the field, in order to gather general information on the transnational company (activity sector, history of the company in the country, etc.); (II) submission of both the questionnaire and the

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the development gap between Spain and Morocco, separated by a strait of only 14 km, is among the broadest gaps between bordering countries in the world.

<sup>4</sup> These questionnaires were aimed at collecting additional information (on around 50 variables), as they were originally conceived in the framework of a larger research project on the effects of FDI on development in North Africa. That research project was implemented between 2011 and 2013.

guide to qualitative information; (III) a second (phone) interview in order to resolve doubts and questions around the provision of data; and (IV) complementary interviews with other actors in the agricultural sector<sup>5</sup>. Fieldwork was conducted between January and March of 2013.

### 5. A foreign-owned almond farm in the framework of Pillar II

As mentioned above, the attraction of modern investment to the agricultural sector (under Pillar I) is implemented through international tenders, meaning that such investments appear in the form of foreign direct investment (FDI). Therefore, the dynamics of dualism might be different from those expected in a closed economy: Lewis anticipated the possibility of a shortcut in the virtuous circle of dualism and development if this were to occur in an open economy. In such a case, where an economy is importing capital from abroad, Lewis (1954) foresaw the formation of enclaves (very much in line with the structuralist postulate).

Indeed, both the Lewisian and structuralist traditions warn of the appearance of enclaves, historically significant in the development challenges of developing countries. Moreover, the capitalist sector might be linked to global production or distribution chains that are disconnected from the local economy, and high levels of productivity might be associated with the display of weak labour intensity. In the latter case, the capacity of the capitalist sector to connect with the traditional economy through labour transfer would therefore be limited.

Morocco has been fairly successful in attracting FDI. During the 2011-2015 period, FDI inflows amounted to 2.9% of the country's GDP – a record figure nearly twice that of the overall region (1.6%), according to UNCTAD data.

However, according to data from the *Office des Changes*, the lion's share of such investment has been channelled to the industrial and real estate sectors (55% of average inflows for the 2011-2015 period). The agricultural sector has meanwhile attracted less than 0.5% of total FDI, and the forestry subsector just slightly over 4 million *dirhams* annually for the 2011-2015 period (or less than 2% of total FDI inflows to the agricultural sector).

Among FDI inflows to the forestry sector are those of Moroccan Almond International S.A.R.L., a greenfield investment by a Spanish agro-food group producing various dessert products, mainly for the Spanish market and its Christmas season. The group also maintains its own almond orchards in southern Spain, allowing it to lessen exclusive dependence on the international market, which is highly speculative<sup>6</sup>.

During the time when Moroccan authorities were seeking to attract Spanish farming companies by means of international tenders for the rental of state-owned properties, this group opted to seize the opportunity and enlarge its almond production in a country with physical conditions similar to those of southern Spain. The production output of the Moroccan farm was meant to target either European Union markets or to reinforce the supply chain of the group. In either case, it was to be an export-oriented investment.

To launch this enterprise, the company rented a farm of 350 hectares (300 of which are dedicated to almond trees), and it invested € 2.5 million in related assets: select new trees; an irrigation system; diverse agricultural equipment; and an almond processing line for the automatic grading, cracking, separating, and peeling of the product. Previously, the company had performed a market analysis and an assessment of product feasibility, mainly focused on land quality and water availability. That study concluded that

<sup>5</sup> These included: representatives of the Ministry of Agriculture and Fisheries; staff of the Belgian and Spanish cooperation agencies, providing financial support to the Ministry of Agriculture and Fisheries and the Agency of Agricultural Development in the implementation of the Green Morocco Plan; the Moroccan agency AMDI, responsible for inward investment attraction; as well as another Spanish company with features similar to the investment under analysis but operating in a different subsector and region.

<sup>6</sup> "Spanish almond farmers warn of market speculation", in Foodnews Agribusiness, October 2015: <https://www.agra-net.com/agra/foodnews/dfn/nuts/almonds/spanish-almond-farmers-warn-of-market-speculation-496602.htm>; "Almond Prices Surge as Sales Boom Collides With Drought", Bloomberg, July 2015.

Table 2 - Productivity in different agriculture contexts.

<i>Productive indicators</i>	<i>Comparison by producing countries</i>		
	<i>California (irrigated)</i>	<i>Spain (non-irrigated/irrigated)</i>	<i>Morocco (non-irrigated/irrigated)</i>
Production area (hectares)	275,000	425,842	144,228
Grain production (tons)	732,580	53,590	21,700
Productivity (kilogram/hectare)	2,686	110 / 360	55 / 450
Producer price (euros/kilogram)	2.28	2.9	3
Production value (euros/hectare)	6,129	319 / 1,044	176 / 1,440
Average farm size (hectares)	35	6.3	5
Share of irrigated farms (%)	100%	95.5%	85%

Source: Moroccan Almonds International S.A.R.L.

conditions in Morocco were as favourable as those in California or Spain, and it recommended the marcona almond as the most suitable variety for such conditions.

The most remarkable investment feature, in terms of its development potential, appeared to be the technological content of the production process, which was likely to favour productivity and certain employment effects, including an increase in qualified jobs. As explained in Table 2, the analysed investment (in line with the performance of Spanish farms) could produce € 1,044 per hectare, while the typical ratio for traditional farms was just € 176 per hectare, according to information gathered by the company from the local producers. Here, what may be the first manifestation of the dualistic gap within the agriculture sector becomes evident: the fact that land productivity in this investment project is 5.93 times higher than in the traditional (or subsistence) sector.

The differences between these two means of production derive from the selection of plant types, irrigation, pruning techniques, and the processing line, as described above.

In summary, where an individual Moroccan farmer manages a farm of 5 hectares and uses 0.2 employees per hectare (essentially allowing the almond trees to grow naturally, without irrigation or careful pruning), a Spanish farmer would obtain productivity in terms of employment that is 10 times higher. This highlights another relevant feature of the investment in terms

of the capitalist/subsistence classification: a capital-intensive new activity will very likely have a relatively higher impact on productivity than on job creation.

As per Table 3, this activity is more likely to produce effects by means of its expenditure in the industrial sector (where 30% of running costs correspond to equipment) than in the labour market (representing only 15% of running costs). However, all the machinery not available from local markets was imported from the group's suppliers in Spain, and purchases were mainly energy and water. In this sense, this almond farm may be complying with the features described by Lewis in the open version of the dualistic model: the capitalist sector may be importing capital from the very source to which it exports its products. If this is the case, the capacity for this sector to close the gap with the traditional sector will be limited.

Regarding labour conditions, the company recognized that most manpower was paid at the legal minimum salary (€ 2,535.60 per year, at that time), which was considered a positive effect given the informality of the sector and the relative value for an annual almond crop produced by an individual traditional farmer (€ 880). However, this investment has not favoured qualified employment other than the managerial position (an agricultural engineer), covered at that time by a Spanish expatriate. Still, this might comply with Lewis' postulates, in the sense that the farm is contributing to an overall



Table 3 - Comparing capitalist and subsistence almond farms.

		<i>Type of farm:</i>	
		<i>Foreign investor (capitalist sector)</i>	<i>Traditional Moroccan (subsistence sector)</i>
Features:		■ Irrigated	■ Non-irrigated
		■ Industrial shelling	■ Manual shelling
Cost structure:	- Labour costs	15%	90%
	- Equipment depreciation	30%	0%
	- Purchases	55%	10%
Farm size (hectares)		350	5
Employees per hectare		0.12	0.2
Productivity (euros/hectare)		1044	176
Productivity (euros/employee)		8,700	880

Source: Authors' interviews.

increase of wages. Even so, given its high land and labour productivity and its capital intensity, the investment does not appear to be a force for job creation.

At the time of our fieldwork, the almond trees had reached only 50% of their production capacity, but the company's turnover accounted for 8 million *dirhams* (€ 720,000), which was considered a success by the company's managers. Although the absolute running costs of the farm were not provided during the interviews, this statement of success is supported by the above information on running costs (mainly water and energy) and by a comparison between the initial investment (€ 2.5 million) and the company's yearly turnover (€ 720,000-€ 1,440,000).

This added value, when shared with the rest of the economy by means of taxation, could conceivably have diverse effects on public goods; but the tax system of Morocco, which awards agriculture with full exoneration from both direct and indirect taxes, hinders such effects. A good share of the value is very likely repatriated to Spain, there being no quantitative or qualitative limitation upon such repatriation in the Moroccan legislation.

Finally, the expected results of the investors in terms of exports and international competitiveness – which, ideally, also would have met the expectations of the GMP – were not fully reached. The Moroccan almond market is pro-

ected by strong tariffs, and the country still presents a negative balance. Thus, the investor has found it more profitable to orient its production toward local markets, thereby having an indirect impact on the commercial balance, via import substitution, but not on local prices, despite the introduction of higher productivity rates.

These factors reveal an interesting feature of this particular company and sector. Both the dualistic and structuralist approaches (along with the GMP) would have expected this almond farm to export its production; but in the end, it does not. Therefore in this case, this Spanish company is not fully complying with the expected profile of the capitalist sector in an open economy.

### 5.1. Widening or closing the gap?

The Spanish almond company does essentially comply with the features of foreign investment expected by the GMP, as well as with those of the capitalist sector in a dual economy, as described in the academic literature. At this point, two questions arise. The first is whether the capitalist-subsistence gap is diminishing or increasing, given that the company does not export its almond production and therefore does not *fully* comply with Lewis' scenario, which predicts a widening gap. However, the company does comply with two other features: the import of capital

and the repatriation of benefits. Secondly, the role of the public sector (by means of the GMP) may also affect the widening or closing of the gap between the two sectors.

In theory, the inward orientation of the analysed investment may actually be a factor of convergence for the two sectors: as the company is not orienting its product to a global production or distribution chain, this internal orientation may be triggering other economic effects that could eventually contribute to closing the gap with the traditional sector. In practice, almonds being a standard product in Morocco already, the only expected effect would come via prices, and yet this is hindered by Moroccan tariffs protecting the domestic market.

The almond farm could play a role in closing the gap were productivity gains and consequent wage increases to spill over into the traditional sector. If a traditional Moroccan farmer managing a 5 hectare farm is able to borrow and adopt Spanish farming techniques, he might eventually increase his production value from € 880 to as high as € 8,700. At the time of our visits to the site, the ADA and Spanish Cooperation in Morocco had already approached the investing company and proposed that it become leader of an aggregation project.

As explained above, aggregation within the GMP does not mean a physical aggregation of lands, but an association of different players within a particular agro-food value chain, in which a high-performing actor takes a leading role in terms of productivity and commercialization. This would very likely favour technological spill-overs to the subsistence sector. However, according to the interviews, the foreign players have found it difficult to cooperate with the subsistence sector given the fragmentation of local almond farmers and their lack of managerial capacities. The company's proposal in this respect was first to set up a cooperative, or else another entity reinforcing the traditional sector's capacities, then to channel both technical and commercial cooperation with modern companies. In this sense, Vitry *et al.* (2015) have collected evidence indicating that implementation of the GMP has been facing difficulties related to the farmers' lack of organizational knowledge and their reluctance to cooperate.

In summary, this appears to be a successful case of FDI attraction under the first pillar of the Green Morocco Plan, as it has introduced a competitive new farm into the country. It has increased private investment for high added-value production that is potentially competitive in international markets.

Moreover, from a wider development perspective, this investment's effects are also limited in terms of its contribution to public goods (due to tax exonerations meant to assist small farmers), or in terms of its ability to inject dynamism into the local industrial sector. Because tariffs hinder any positive effect on prices, Moroccan industry has not captured the new demand for industrial equipment.

## 6. Conclusions

The GMP may be facing limitations on coping with the dualistic nature of Morocco's agricultural sector due to the terms under which Pillar I is implemented: (1) through international tenders, leading to FDI inflows; and (2) without the necessary conditions for extending modernization to the local traditional sector. Although this single case may not represent the whole agricultural sector, it seems plausible that other foreign investments may prove unable to produce the development outcomes expected by the GMP, for several reasons.

First, this agricultural exploitation is capital-intensive rather than labour-intensive (in relation to Moroccan farms in general), and it does not seem an adequate means to achieve the GMP's goals in terms of job creation. While it is true that investments in other products might involve different technologies, and be relatively more demanding in terms of manpower, mechanization remains an explicit goal of the GMP in line with its concerns over international competitiveness.

Second, technological spill-overs from foreign companies are not automatic but demand that linkages be forged between the foreign company and local actors (suppliers, partners, etc.). To favour such linkages, the aggregation program of the GMP and, in general terms, the facilitating role of the ADA seem to be useful policy tools.

Third, any profits achieved in protected markets by modern farms with limited manpower, low rental costs, and full tax exoneration will favour the investor exclusively. It is remarkable that the GMP has not taken consideration of such key economic policy tools as taxes, wages, tariffs, or subsidized land rental in modern agriculture. In short, the GMP may in this regard be subsidizing foreign investors, rather than local agricultural businesses in the subsistence sector, which may be defeating the purpose of the plan.

This study has further raised a series of questions in terms of public policy. As per the overall logic of the GMP, the attraction of foreign players with productivity rates 10 times higher than local farmers may be seen as a necessary condition to finding leaders for the reorganization of value chains and the upgrading of local farm productivity. However, this case (as well as previous research by Vitry *et al.*, 2015) points out that such reorganization at the sector scale demands a certain pre-existing organizational structure among local farmers. Thus the GMP might consider a re-evaluation of how public support to agricultural activities in the first pillar may be subject to synergies vis-à-vis the second pillar. For instance, tax exonerations could be limited to the second pillar only, or to aggregation projects, while taxes paid by the performing capitalist sector could, for example, fund policies supporting technological upgrades in the subsistence sector. In any case, the next version of the Green Morocco Plan should perform a cost/benefit analysis of Pillar I by comparing the opportunity costs of deals made with foreign investors to development effects such as labour creation, local purchasing, and technological spill-overs.

From a more academic point of view, this case study reveals the difficulty in converging the traditional and modern sectors within an open economy; as pointed out by structuralists and by Lewis in the case of open economies, the vibrant innovative sector produces basic goods and imports capital goods, but may develop into an enclave. Thus, its results in terms of convergence and development are in line with those forwarded by the academic literature: the enterprise is not drawing labour from the traditional farms,

technology is not spilling over to the poorest rural areas of production, and there is no tendency toward increased labour productivity in the subsistence sector.

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## Annex A

Projet de recherche:

“Investissement étranger et développement - Opportunités pour les pays d'Afrique du Nord”  
Enquête aux entreprises

1 (A4). Quel est votre chiffre d'affaires du dernier exercice fiscal?

██████████

2 (A5). Quel est votre share dans le marché ?

██████████

3 (A6). Quelle est la ratio investissement / chiffre d'affaires et son évolution pendant les 5 dernières années?

2007 ██████████

2008 ██████████

2009 ██████████

2010 ██████████

2011 ██████████

4 (B1). Quel pourcentage représentent-ils les approvisionnement sur votre chiffre d'affaires ?

██████████

(B2). Quels sont vos approvisionnements principaux :

Produit 1 ██████████

Produit 2 ██████████

Produit 3 ██████████

Produit 4 ██████████

Produit 5 ██████████

5 (B3). Sont-ils locaux ?

Produit 1 Oui  Non

Produit 2 Oui  Non

Produit 3 Oui  Non

Produit 4 Oui  Non

Produit 5 Oui  Non

6 (B4). Parce que vous n'avez pas le choix ?

Produit 1 Oui  Non

Produit 2 Oui  Non

Produit 3 Oui  Non

Produit 4 Oui  Non

Produit 5 Oui  Non

Commentaires ██████████

7 (C1). Importez-vous des produits de l'extérieur ?

Oui  Non

Lesquels? ██████████

8 (C2). Quel pourcentage représentent les importations en relation avec vos achats totaux ?

██████████

9 (C3). Dans votre cas, quels sont les pays d'importation ?

Pays 1 ██████████

Pays 2 ██████████

- Pays 3
- Pays 4
- Pays 5
- Catégorie 3
- Catégorie 4
- Catégorie 5
- 10 (C4). Comment distribuez-vous vos ventes à l'intérieur et à l'extérieur du pays ?
- Pourcentage des ventes....
- ...à l'intérieur du pays  %
- ...à l'extérieur du pays  %
- 11 (C5). Dans votre cas, quels sont les pays d'exportation ?
- 
- 12 (C6). De vos lignes de financement, existe-t-il une partie d'endettement extérieur ? Quelle pourcentage représente-t-elle du financement total ?
- Oui  Non
- Part (%)
- 13 (C7). Rapatriez-vous vos bénéficiaires au pays d'origine de l'investissement ou dans un autre pays ?
- Oui  Non
- Part (%)
- 14 (D1). Faites une évaluation de la compétitivité du secteur avant l'initiation de vos activités
- 0 (nulle) - 5 (très élevée)
- 15 (G1). Combien de travailleurs a votre entreprise / projet d'investissement ?
- 
- 16 (G2). Catégories professionnelles ?
- Titre catégorie 1
- Titre catégorie 2
- Titre catégorie 3
- Titre catégorie 4
- Titre catégorie 5
- 17 (G3). Salaire moyen ?
- Catégorie 1
- Catégorie 2
- 18 (G4). Évaluation de la législation: favorise-t-elle l'emploi et la formation de personnel local ?
- 0 (mauvaise) - 5 (excellente)
- 
- 19 (G5). Évaluation de la qualification du capital humain pour votre activité productive.
- 0 (mauvaise) - 5 (excellente)
- 
- 20 (G7). Existence-t-il d'autres demandes d'emploi sur vos ressources humaines ? Évaluez la pression de la demande sur vos employés.
- 0 (base) - 5 (très haute)
- 
- 21 (H6). Quelle évaluation faites-vous du différentiel en technologies propres par rapport à vos concurrents ? (procès de production, biens d'équipement, etc.) ?
- 0 (nul) - 5 (élevé)
- 
- 22 (H8). Quels impôts, taxes publiques ou d'autres prélèvements doit payer votre entreprise ? Quel pourcentage représente-t-ils de votre chiffre d'affaires ?
- Lesquels?
- 
- 
- Part des ventes totales (%)
- 
- 23 (H9). Selon votre expérience personnelle, avez-vous détecté des problèmes de corruption ?
- 0 (aucun) - 5 (beaucoup)
- 
- 24 (H11). Quelle évaluation faites-vous des infrastructures locales pour la réalisation de votre activité productive ?
- 0 (mauvaise) - 5 (excellente)
-



**Annex B**

Projet de recherche: "Investissement étranger et développement - Opportunités pour les pays d'Afrique du Nord"

**Plan de l'entretien**

A	<i>Activité et création de l'entreprise</i>
A1	Quel est l'objet de votre activité productive?
A2	Dans quel secteur et sous-secteur productif se trouve votre activité économique?
A3	Existait-il des produits / services similaires aux vôtres avant votre début d'activité?
A7	L'entreprise est-elle de nouvelle création ou le résultat d'une fusion ou d'une acquisition?
A8	Qui sont vos clients?
A9	Avez-vous observé dans vos marchés de vente de nouvelles entrées ou investissements?
B	<i>Fournisseurs</i>
B5	Il y a-t-il une législation ou obligation d'achats locaux?
B6	Avez-vous observé de nouvelles entrées ou de nouveaux investissements dans votre chaîne de fournisseurs?
B7	Avez-vous observé la création de nouveaux emplois dans votre chaîne de fournisseurs?
C	<i>Insertion extérieure</i>
C8	De quelle manière facilite ou difficulté la législation vos exportations et vos importations?
D	<i>Concurrence du marché</i>
D2	Quelle est votre principale concurrence (numéro de compagnies, taille, noms...)?
D3	Quelle a été la réaction de votre concurrence à votre entrée / croissance dans le secteur / marché? Par exemple, observez-vous un effet imitation ?
D4	Avez-vous observé de nouvelles entrées/ investissements entre vos concurrents?
E	<i>Intensité / transfert technologique</i>
E1	Quelle est votre évaluation du différentiel technologique par rapport à vos concurrents (procès productif, biens d'équipements, etc.)?
E2	Quelles sont les exigences technologiques de votre entreprise sur les fournisseurs et comment sont-elles répondues par vos fournisseurs locaux?
E3	Quel est le rôle de votre entreprise avec les améliorations technologiques dans votre chaîne de fournisseurs?
G	<i>Travail</i>
G6	Avez-vous une politique de formation officielle ou informelle? Décrivez-la
G8	Avez-vous besoin d'embaucher du personnel étranger? Quelles sont les avantages et les inconvénients par rapport aux employés locaux?
G9	Avec quels critères votre entreprise décide-t-elle les rémunérations? Avez-vous formalisé ces critères?
H	<i>Fiscalité, communauté et environnement</i>
H1	Quelles organisations de la société civile ont contacté votre entreprise?
H2	Avez-vous une politique de relations avec la communauté où vous opérez (voisins, autorités locales, universités, etc.)? Décrivez-la
H3	Comment collabore votre entreprise avec l'environnement? Avez-vous adopté un compromis formel par écrit en matière environnementale?
H4	Quelles lois environnementales ont eu un impact sur les opérations de votre entreprise?
H5	Quelles investissements ont été réalisés par votre entreprise en technologies propres?
H7	Avez-vous transféré vos technologies propres à des fournisseurs, clients ou concurrents? Décrivez la situation.
H10	Faites-vous une ou plusieurs contributions volontaires financières à la communauté?