

Cultivating Change: Community-Driven Entrepreneurship in Rural Morocco



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Abstract

This paper explores the feasibility of implementing an entrepreneurial education program with an almond cooperative in Ighrem, Morocco. Inspired by Fundación Paraguaya's sustainable school model and educational frameworks by Junior Achievement, the initiative intends to empower the community with a proposed training model, enhancing the cooperative's prosperity. Using a qualitative needs assessment involving community engagement and interviewing subject matter experts, the study aims to identify key challenges and opportunities in adapting the model to suit the cooperative and Ighrem's needs.

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Meet The Team



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Executive Summary

Project Goal and Objectives

This study explores the feasibility and practicality of introducing an entrepreneurial training program in a rural village in Morocco, known as Ighrem. The objective of this project is to lay the groundwork for stimulating the economic state of Ighrem by focusing on viability assessments and offering recommendations for future initiatives. Almond production is the frontline business venture of Ighrem, spearheaded by a local cooperative, which has been the focus of the research team's work. Through interviews with stakeholders and local community members, three key themes emerged: needs assessment, community involvement, and marketing and product development. In addition to limitations and recommendations to support the project, an entrepreneurial infographic with helpful resources and lesson plans was designed for the community's implementation of a future training program.

Background

The initial goal of this study was to provide an alternative educational model for Ighrem to promote its economic and general growth and prosperity. Due to common issues of illiteracy, innumeracy, and financial struggles in rural areas in Morocco, improving entrepreneurial skills was a focus. The research team identified Fundación Paraguaya's San Francisco Agricultural School to be an ideal model to emulate. The school employs a dual learning system where students study traditional academic subjects paired with business education, similar to, and rooted from, Junior Achievement lessons. The students then apply their knowledge in one of the many businesses hosted in the school, gaining experience in entrepreneurship and business. The profits from these businesses are used to fund the costs of the school, making it fully sustainable.

However, after conducting a needs assessment of the town, the research team uncovered many details that changed the focus of the project. Many afterschool programs promoting educational growth were already present in Ighrem, directing the team away from the sustainable school model. However, the team discovered that a nearby almond cooperative that employed many of the local women was experiencing troubles with marketing their product. Therefore, the team decided to shift their focus toward cooperative education and marketing. Interviews with a variety of individuals were arranged to acquire a sense of how best to organize and implement an education system to achieve this goal.

Methods

To achieve these objectives, the researchers conducted interviews and reviewed supporting documents. Dr. Martín Burt provided the team with documents outlining how to inspire people to learn about how the economy functions and how to leverage it to improve daily lives as a driver of social and economic development. These documents served as a guide on how to outline a business, analyze the current market, and establish plans to both produce and promote a product, service, or project. Additionally, the research team conducted an ethnography to better understand the Moroccan worker's experience. These first-hand accounts were carried out with the intent to explore attitudes toward work. The research team conducted one-on-one and group interviews lasting approximately 45 minutes each. These interviews were conducted via WhatsApp phone calls, Zoom, and in-person. The research team met with city officials, experts, foundations, and a member of a cooperative in Rabat.

Findings

The research team identified four consistent ideas across the interviews and observational data. The first two themes were related to the importance of conducting a needs assessment as well as understanding the importance of culture and community involvement. These two factors must be included in any plan to establish a successful program in a tight-knit community such as Ighrem. Additionally, the team identified education, with a focus on marketing education, as an area of focus for any potential program. Education comes in the form of lessons and curriculum that act as the spine of a program, but it also comes in the form of learning soft skills, building emotional intelligence, fostering critical thinking, and promoting collaboration that will help students excel in networking. Finally, after talking to city officials and a local cooperative worker, the team identified marketing and product development as critical areas of improvement. Enhancing the marketing success of the almond cooperative in Ighrem is crucial for scaling the business and expanding its reach to new markets beyond the rural landscape of its headquarters. This growth not only benefits the cooperative itself but also positively affects the entire community of Ighrem. Improved marketing strategies will boost the almond cooperative's profits and contribute to the economic prosperity of Ighrem by creating job opportunities in agriculture, education, and business.

Discussion

The research team encountered a broad range of limitations that spanned physical distance and communication breakdowns between the sponsors and the research team. The primary challenge the team faced was the physical distance to reach the target population in Ighrem. A trip to a remote town such as Ighrem posed logistical challenges, notably expenses,

and time consumption, given the projected two-day travel duration. Furthermore, language was another barrier the team was tasked to overcome. The primary language in Ighrem is the local Amazigh dialect, with Darija as the second language spoken. Not only was there no available English translator in Ighrem, but there was not a Darija nor Amazigh translator available in Rabat where the team was situated. Additionally, internet and technology are scarce in a town such as Ighrem, which made online meetings difficult to arrange.

Considerations for future projects of this type include ensuring community acceptance and involvement as highlighted by the need for a community-driven approach. This involves conducting a thorough needs assessment to identify specific problems and solutions that would collectively benefit the target population. Key factors to consider before proceeding include addressing potential language barriers, logistical challenges, and political ramifications. Active sponsor support will help to ensure a linear progression of the project. Future projects focused on Ighrem could address topics such as transportation systems, access to water, collaboration with Fondation Orient-Occident, and leveraging social media platforms for cooperative marketing.

The deliverable for this project is an infographic containing an action plan for establishing an entrepreneurial education program, and the necessary steps and tools required for its successful implementation. Furthermore, the infographic contains useful resources and points of contact that can benefit the town of Ighrem economically and provide opportunities for improving financial literacy and entrepreneurial education.

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5.3.1 Consideration for Future Community Projects	Kate Dobson	Ibraheim Ibraheim
5.3.2 Future Projects	Kate Dobson	Lolita Cani
5.4 Project Deliverables	Ibraheim Ibraheim	Lolita Cani
6.0 Conclusion	Lolita Cani	All

Table of Contents

Abstract	i
Acknowledgments	ii
Meet the Team	iii
Executive Summary	iv
Authorship	viii
Table of Contents	x
1.0 Introduction	1
2.0 Background	2
2.1 Region	2
2.1.1 The Amazigh	2
2.1.2 The Souss-Massa Region	3
2.1.3 Current Education System in Morocco	4
2.1.4 The Village of Ighrem	8
2.1.5 Setting	8
2.2 Cooperatives and Almonds	9
2.2.1 Cooperatives in Morocco	9
2.2.2 The Dahab Souss Cooperative	10
2.2.3 The Almond Crop	11
Figure 1: Production of raw almond oil in Fes, Morocco	13
Figure 2: Production of amlou (almonds, honey, argan) in Fes, Morocco	14
2.3 Entrepreneurial Education	14

2.3.1	Junior Achievement	14
2.3.2	Fundación Paraguaya	15
2.3.3	San Francisco Agricultural School	16
2.3.4	Fondation Orient-Occident	17
3.0	Methodology	19
3.1	Methods Introduction	19
3.2	Data Collection: Interviews	20
3.2.1	Consent and Confidentiality of Participants	21
3.2.2	City Officials	21
3.2.3	Dr. Alisha Jean-Denis	22
3.2.4	Dr. Martín Burt	23
3.2.5	Fondation Occident-Occident Representative	23
3.2.6	Community Member of the Dahab Souss Cooperative	24
4.0	Findings	25
4.1	Findings Introduction	25
4.2	Needs Assessment	26
4.3	Community Involvement	28
4.4	Cultural Sensitivity	30
4.5	Marketing Education and Product Development	32
5.0	Discussion	35
5.1	Discussion Introduction	35
5.2	Limitations	35
5.3	Recommendations	36

5.3.1	Consideration for Future Community Projects	36
5.3.2	Future Projects	38
5.4	Project Deliverables	38
6.0	Conclusion	40
7.0	References	42
8.0	Appendices	48
	Appendix A: The Artisans of Morocco	48
	Appendix B: Interview Questions	55
	Appendix C: Informed Consent Agreement	60
	Appendix D: Deliverable	64

1.0 Introduction

The village of Ighrem, a community in the Souss-Massa region of southern Morocco, and its surrounding areas are occupied by the Amazigh, an ethnic group of people that are native to Northern Africa. The Amazigh are the original inhabitants of Morocco and live a nomadic lifestyle, centered on farming, herding, and tribal allegiances.

Among the native farmers of Ighrem, the almond crop plays a pivotal role in stimulating the small town's economy by creating employment opportunities. They are also a symbol of pride, as they represent Moroccans' rich cultural heritage. Almond production offers a versatile source to households including uses for cooking, health, and beauty purposes. Almonds are utilized in Moroccan cooking to make flour for baking needs, and sliced in savory dishes and desserts. They are often turned into almond butter and oil for further culinary use. The people of Ighrem use almonds beyond consumption needs: given their moisturizing qualities, almond oil is frequently used in skincare products, and almond extracts can be found in a wide range of creams, lotions, and cosmetic products.

The current education system in rural areas of Morocco such as Ighrem, does not adequately prepare graduates with an entrepreneurial education, leading many to lack the knowledge to market and sell their products. This has affected communities and caused marketing struggles for cooperatives, in particular, an almond cooperative located in Ighrem. The presence of an entrepreneurial training program for cooperatives may help expand business ventures beyond the local market. Through the use of resources such as the sustainable school model pioneered by Dr. Martín Burt and Fundación Paraguaya and the Junior Achievement entrepreneurship program, this research project assesses the feasibility of implementing a similar model in Ighrem.

2.0 Background

2.1 Region

2.1.1 *The Amazigh*

The Amazigh, also commonly referred to as Berbers, are an ethnic group that inhabit current-day Morocco, Algeria, Libya, Tunisia, and other countries west of the Nile River. According to the International Work Group for Indigenous Affairs, about 30 million Amazigh are living in North Africa, with about 65% of Morocco's total population (20 million people), being Amazigh (Jaouen, 2023). Almost everyone in Morocco has Amazigh roots, whether or not they identify with that background. They present a culture that is complementary to the traditional Arab structure, with nomadic and tribal traits at the heart of Amazigh life. Due to the tribal nature of Amazigh communities, there are stark contrasts between different Amazigh peoples, depending on factors such as location, relationship and proximity to Arab neighbors, and socio-economic systems (Gagliardi, 2018). The Amazigh draw their roots as far back as the Stone Age and are often considered one of the first groups that settled on the Earth.

Living in the mountainous and desert regions of North Africa, the Amazigh serve as the primary caretakers of the Sahara Desert and Atlas Mountains. They have adapted to the demanding climate of Western Africa, which can be observed in their clothing, usually consisting of an airy, breathable cloth. Today, Amazigh culture and life can be found in the outskirts of Moroccan urban centers, and in rural villages near the Middle Atlas region, such as Ighrem. These communities survive by relying on agriculture and livestock cultivation.

According to Houdret (2020), Amazigh communities are divided based on tribes and kinsmanship. This means that families are at the core of the hierarchy, with elders holding the highest rank of honor, and often leading the collective decision-making process. Clans and tribes

are usually divided based on groups of families that have shared ancestry. It is also important to note that communities are structured based on a patriarchal hierarchy, with men performing manual labor such as hunting and farming, and women often found in the house. Furthermore, there is a strong presence of alliances, both between tribes across Morocco and between leaders and the government. The pan-Arab governments would offer access to roads and waters to clan leaders, in return for their loyalty as well as ensuring that their tribes stay loyal, or at least friendly, to the new rulers. The Arabization of Morocco began with most of the country adopting the Arabic language and the Islamic religion. Rural regions were able to retain more of their Amazigh roots, as they were isolated from the urban pressure to assimilate.

2.1.2 Souss-Massa Region

The Souss-Massa Region is one of twelve regions in Morocco and is located in the southwest. It is bordered by the Atlantic Ocean, the High Atlas Mountains, the Anti-Atlas Mountains, and the Sahara Desert. The capital city is Agadir, and according to the 2014 census conducted through the Haut Commissariat au Plan, the population is 2,676,847. Of this population, 1.51 million live in urban areas, and 1.17 million live in rural areas (HCP 2020).

The region is governed by a council that acts as the decision-making body, which works in collaboration with other regional councils and the Parliament of Morocco on topics including economic and rural development and culture. Within the region, there are prefectures and provinces which have responsibilities such as maintaining rural tracks and roads. The final division is municipalities which are in charge of more local projects, such as electricity distribution, urban planning, and parks and recreational spaces (ECR, 2015).

The surrounding geography creates an arid climate that is mild and steady, with the Atlas Mountains blocking cold fronts and the Atlantic Ocean providing a sea breeze (Abahous, 2018). The warmest months are July and August with highs averaging about 40°C, and the coldest month is January with average winter lows of 1.1°C (El Oumlouki, 2018). The wet season runs from November to March, with the majority of precipitation occurring in November, and the dry season is from April to October, where the region sees an average of less than eight millimeters of rain (El Oumlouki, 2018). Despite the arid climate, the Souss Massa region is an important agricultural contributor and produces large amounts of vegetables, both for export and domestic use (Walters, 2018).

2.1.3 Current Education System in Morocco

During the colonial era, France developed an educational system in its colonies. As a result, former colonies, including Morocco, have maintained educational systems modeled after France. Morocco continued to utilize this educational system, which is ingrained in their culture, even after colonialism fell. Morocco's educational system has many obstacles, including disparities in accessibility between urban and rural areas, gender inequality, cultural diversity, difficulties accommodating various languages, age-specific problems, and considerable infrastructure and geographic constraints in rural areas.

The quality of education also varies based on the resources available. Moroccan schools often face deficiencies in basic facilities such as drinking water, electricity, and sewage (Llorent-Bedmar, 2014). This poor infrastructure directly hampers a student's educational experience. Strengthening basic facilities is foundational for establishing a supportive learning environment.

Urban and metropolitan areas typically offer higher access to schooling due to increased resources and qualified instructors. With a more developed infrastructure, there is also the advantage of a more positive learning environment. However, they still face a multitude of issues. Underprivileged urban pupils may encounter difficulties receiving an education due to factors including scarce resources, such as textbooks and other school materials (El Alaoui, 2021), overcrowded classrooms (Wilson, 2011), and a lack of support networks. These obstacles may also result in variations in academic performance and fewer prospects for social mobility.

Numerous issues affect education in remote locations, including inadequate infrastructure, fewer schools, and a qualified teacher shortage. In 2022, 56% of children attended schools where the principal reported that a shortage of teachers was impeding the school's ability to offer education, and 44% of schools had inadequately prepared teaching faculty (OECD, 2023). The greatest obstacles are the limited presence of preschools and their poor quality, especially within rural regions where only 27.9% of kids in grades four through five attend school (Gagliardi, 2018). Moreover, low rates of parental education, sizable households, inadequate living conditions, and poverty contribute to a lack of familial engagement in supporting their children's educational progress and success. Although parents would like schooling for their children, they lack the means to do so, being unable to cover the costs of tuition and supplies, nor provide child safety (Momo, 2022). Morocco has poor literacy rates in part because of low regular attendance, teacher absenteeism, and multilingual classroom settings. Less than 15% of first-graders are expected to graduate from high school, and only 53% of middle school pupils proceed to secondary school due to high dropout rates (USAid, 2019). This results from difficulties in implementing compulsory education, especially during elementary to secondary education transitions. The dropout rate for 15-year-olds in Morocco was found to be

54% for girls and 43% for boys (Smits, 2013). This is in tune with traditional practices that promote the education of boys over girls. This reinforces the male-dominated atmosphere of education policy by maintaining the cycle in which few women obtain an education.

Gender disparities persist throughout the education system, particularly in rural areas. Girls receive less access to school because of cultural norms, with the traditional society being patriarchal and male-dominated. Various factors perpetuate gender disparities in Morocco's educational system. Socioeconomic, political, and institutional factors prevent girls from beginning an education, let alone completing one. These factors include underage marriages, poverty, high education expenses, and social customs. Due to gender distortion in textbooks, poor school infrastructure, and the underrepresentation of women in leadership positions in education, disparities continue. The gender education gap in Morocco affects women more than men, especially in rural areas. Literacy and enrollment rates are lower as a result of traditional roles and economic systems. According to the High Commissioner for Planning (HCP), it was reported the illiteracy rate in Morocco was 36.5% (females 47.6% and males 25.3%). Illiteracy affects women more than it does males, particularly in rural regions where over half of the female population is illiterate. Just one in ten females in these areas completed their secondary education, and Moroccan authorities continue to face enormous challenges in implementing compulsory education in these areas (Auletto, 2017). Outdated cultural traditions, especially in rural regions, support conventional gender roles and devalue the need to educate females. Young women are often kept close to home to support the household. This cultural norm of bearing duties of household labor or marrying at a young age continues to consign young women out of the education system, leading to a consequence of low or no academic achievement (Auletto, 2017). Girls may also drop out of school because it is believed that developing domestic skills

will better prepare them for their futures, and marriage is seen as a better form of social mobility than formal education (Naji, 2012). In rural locations, Amazigh remains the mother tongue; and the language barrier compounds the problem. For Amazigh females, learning is hampered by a scarcity of instructors who know the language, despite the fact Amazigh remains the second native tongue.

In villages like Ighrem and others across Morocco, the geography and terrain of the country significantly impact education. To serve distant populations, schools in remote areas are stretched over a large geographic area. It is challenging to construct schools that are easily accessible to all pupils due to the geographic and topographical characteristics of the surrounding areas. Students are forced to travel further from their homes, and as a result, it makes it difficult for them to attend classes regularly. Regular school commutes are difficult for students to undertake due to remote locations and tough terrain, as well as the lack of transportation infrastructure. Long commutes are a common need for students to get an education, thus, distance creates a disconnect in learning, which is detrimental to school completion. (Abuya, 2013). Oftentimes, walking is the default option, as buses, cars, and bikes are scarce, too expensive for most, and overall concentrated in more urban areas as opposed to rural ones. Dirt roads in rural areas are unreliable and dangerous, with a mix of plains, mountains, semiarid land, and desert. Inclement weather, particularly during wintertime, can render traveling to school challenging. Poor conditions make it harder to guarantee regular attendance, especially in rural areas.

2.1.4 The Village of Ighrem

Nestled in the Anti-Atlas Mountains, 17 communities from the province of Taroudant surround Ighrem. Ighrem serves as a centralized hub of the region's communities, playing a significant role in providing essential services, including schools, administrative offices, banks, and markets that individuals from nearby areas rely on. The region's communities are more integrated due to this centrality.

The village of Ighrem has two schools; one primary school and one secondary school. The primary school is known as "El Hazouli", and the secondary school is "El Arak". These schools act as a catalyst for literacy and numeracy, as they connect and serve the educational needs of the surrounding communities. The Inflas, a tribal council elected by the tribe's members, is the conventional system of governance used by the tribes of Ighrem to oversee affairs and settle conflicts within the community, including the education system.

2.1.5 Setting

Obtaining information regarding the village of Ighrem, including demographics, cultural norms, economic status, and agricultural systems under the circumstances and context in which Ighrem is located has been unfeasible. Ighrem is in southern Morocco, and the closest province, Taroudant, is a four-hour ride from the city of Rabat, where the research team is based. According to WorldBank (2004), rural areas are home to roughly 70% of the impoverished. Just over 43% of Moroccan villages have year-round, easy access to rural roads; the remaining territories are either entirely inaccessible to motorized vehicles at all times (22%) or have limited access and are isolated during some weather seasons (35%). The lack of means to physically reach Ighrem made it non-viable to gather observational data independently (pictures, interviews,

video recordings, and journal entries). Due to its miniscule population and remote location, there is virtually no information about the town of Ighrem online.

Secondly, 66.9% of the Moroccan rural population is illiterate (Charfi, 2009), making it difficult for subjects to understand, interpret, and respond appropriately to surveys. For this reason, the research team relied on interviews and required a translator who could translate between Amazigh and standard Arabic. Furthermore, the team needed another translator who could translate the Arabic into English. This began to introduce many complications and limitations as meaning was lost in translation. Additionally, there are words and phrases embedded in the local language that do not translate directly to English.

The research team acknowledged the limitations placed by relying strictly on verbal communication, such as interpretation bias (both in the language barrier and conceptual interpretation). The team worked around this limitation by presenting questions in multiple forms and angles, as well as repeating what they understood to the subjects. This ensured subjects and the team were on the same level of understanding when interpreting questions and responses. During a conversation with subjects, an Arabic translator was present.

2.2 Cooperatives and Almonds

2.2.1 Cooperatives in Morocco

The cooperative business model plays an important role in rural economics and development. A cooperative is an organization that is run jointly by its workers, where they can pool resources and get an equal share of the profits. However, cooperatives in Morocco are sometimes started and run by associations that are in charge of selling the products and distributing profits (Montanari, 2023). In Morocco, the laborers in these cooperatives are almost

entirely women (Nejjari, 2023). In some cases, the cooperatives offer additional services such as childcare or literacy classes to encourage local women to join (Perry, 2019). As of 2019, there were 27,262 cooperatives in Morocco with more being started every year (Bouhazzama, 2021).

Cooperatives can be divided into several different classifications. The most prevalent throughout Morocco are agricultural cooperatives making up about 64.5% of all Moroccan cooperatives, followed by artisanal as the next largest category (Bouhazzama, 2021). Agricultural cooperatives focus on a crop and related products, such as the argan tree and argan oil. A large portion of agricultural cooperatives in Morocco are based on argan but others include crops such as almonds, olives, and dates (Perry, 2019). Artisanal cooperatives focus on a craft such as weaving or traditional sewing. For more information on Moroccan artisans, see Appendix A.

2.2.2 The Dahab Souss Cooperative

The Dahab Souss cooperative is a local almond cooperative based in Agadir with a secondary location in the Rabat Medina (marketplace). The cooperative is made up of six or seven women, with four or five working in the production center in Agadir, and two at the selling outpost in Rabat. The cooperative cultivates raw products such as almonds, argan, sesame, pumpkin, and cocoa seeds. Beyond selling these raw materials, the cooperative produces dietary and aesthetic products such as shea butter, amlou, honey, couscous, and various other goods. The cooperative receives the majority of its business from tourists who desire local handcrafted goods not found back in their home countries.

2.2.3 The Almond Crop

Almonds are native to the Mediterranean and Middle Eastern regions but grow in warm climates in the west such as California. Almond trees require a dry and hot environment to grow, making Ighrem a perfect place to grow this fruit. They are cultivated either manually, by shaking the tree, or mechanically, by using a tree shaker. Almond processing begins with hulling, the process of removing the outer shell, which can be achieved manually or mechanically. Next, almonds undergo further drying to remove any excess moisture. Depending on the intended form of consumption, almonds can either be ground or roasted before they are ready for packaging.

Ighrem is located in one of Morocco's most arid areas, with the Anti-Atlas location being one of the driest mountainous regions of Morocco. With barren land and sweltering heat in the warmer summer months, drought-tolerant species, specifically the almond tree, thrive in this environment. The Atlas Mountains are volcanic in origin, creating a surface area composed of schist, basalt, and bedrock. The hollows of the valleys carry the most fertile soils, ideal for cultivating crops, such as almond trees. The valleys encompassing Ighrem provide conditions ideal for cultivating irrigated agriculture, and the almond tree has the potential to provide a marketable product that can be consumed, or crafted into oil for a variety of uses. Farmers create terraces along the mountain slopes to maximize crop productivity. Terracing is a traditional technique used by farmers to control soil erosion by constructing level zones on steep slopes that aid in retaining soil nutrients and slowing down water discharge (Boukdir Y., 2011).

Moroccan almond farmland is the world's third-largest area dedicated to the production of this nut. Although Moroccan almonds have a unique rich taste, many Moroccans opt for imported almonds from other countries such as the United States due to the staggering prices of locally produced almonds. A study in 2021 found that 85% of the almonds consumed by the

Moroccan population were imported from California. Furthermore, Moroccan farms are at a significant disadvantage as they do not have the same industrial capabilities as American agricultural powerhouses that have the means to mass-produce almonds. According to farmers interviewed by Rekolt, only 1% of Moroccan almonds get exported out of the country due to a “poor reputation” (Anouar, 2022). As Moroccan almond farmers struggle to export their goods internationally and to city centers away from the rural villages where they were grown, there is an identified need for farmers to advertise and streamline their products to new markets.

Rural almond farmers such as the ones in Ighrem are at a further disadvantage than their urban counterparts in industrialized, modern cities such as Rabat and Casablanca for several reasons. The remote location of towns is the first and most challenging hurdle farmers must overcome. Ighrem is two hours from the Taroudant province, and over five hours away from Marrakech (the closest urban center). Not only is the drive long and strenuous, but it is also dangerous, as state transportation officials do not entirely monitor the roads. These obstacles make transporting the crop a heavy expense that most rural farmers cannot afford.

Mass producing enough almonds to export outside of rural areas requires significant costs. Expenses include storage areas, employees, advanced irrigation systems, modernized equipment (such as tree shakers), and most notably, a vast amount of farmland. Lack of adequate capital, or start-up money, is another significant challenge for rural farmers to overcome. Microloans or donations from foundations are often a solution to overcome these obstacles.

Rural farmers in Ighrem lack certain education which puts them at a disadvantage when compared to western agricultural farms. Firstly, rural farmers are not up-to-date with the necessary regulations, tariffs, and quality control standards that foreign markets demand. International marketing laws are complicated, delicate, and explicit, leaving no room for error or

ambiguity. Because almonds are an edible good, further care and attention have to be taken to permit selling overseas. Improving access to training, technical assistance, and market knowledge on trade regulations is essential to empower rural almond farmers to effectively participate in international trade and access new consumers for their products.

Furthermore, Ighrem almond farmers lack the entrepreneurial skills to successfully build a sustainable business that expands beyond its home location. Entrepreneurial education extends beyond the basic requirements to run a business mentioned previously, as advertising and marketing play an important role in the economics of the 21st century. Without adequate marketing strategies, even the highest-quality almonds may struggle to gain traction in competitive markets. Therefore, initiatives aimed at providing rural farmers with training in marketing and business development are essential for enhancing their competitiveness and facilitating their integration into broader markets. By addressing these challenges and equipping rural almond farmers with the necessary skills and resources, Morocco can harness the full potential of its almond industry, benefiting both farmers and consumers alike.



Figure 1: Production of raw almond oil in Fes, Morocco.



Figure 2: Production of amlou (almonds, honey, argan) in Fes, Morocco.

2.3 Entrepreneurial Education

Entrepreneurial education is an important sector to review when considering how best to provide business knowledge to Ighrem and the almond cooperative. It is defined as providing knowledge to individuals, primarily youth, regarding business and financial literacy. It is oftentimes a goal of this form of education to help people uplift themselves financially by equipping them with the necessary tools to cross socioeconomic barriers.

2.3.1 Junior Achievement

In the early 20th century it was a fear of many academics and society alike that schools and education were vulnerable to the influence of corporate America. This was true as many towns were dependent on businesses pertaining to related products (Sukarieh, 2009). These businesses exerted significant influence over schools and education systems through various means such as funding, teacher selection, and policy implementation. Generally, as funding

diminished for schools, they became evermore dependent on their corporate partners to provide financial aid for the longevity of these schools. There was a call to reform American education to prepare individuals for the workforce, and corporations sought a professional and systematic method of achieving this aim. To provide a safe source for business education, Horace A. Moses, Theodore Vail, and Winthrop M. Crane created Junior Achievement (JA) in 1919 to spread this educational “corporatization” (Sukarieh, 2009). In the model, students from elementary to high school participated with volunteers experienced in business in a mock business model, selling small products and gaining proficiency in financial literacy. The organization received immense political and financial backing from its founding. Events such as the Great Depression and attacks from various democratic groups in the 1920s and 1960s respectively hindered its progress. After another surge in corporatization in the 1980s, the focus and scope of JA changed. It sought to target students of all backgrounds and interests, including students from urban, suburban, and rural school settings. After the conclusion of the Cold War in 1989, JA spread rapidly to the entire globe, from 19 countries in 1990 to 70 in 2000. It now resides in a plethora of forms bringing its same lessons to students in different countries. JA is used to varying degrees, with some institutions using it as the guiding model of their educational vision, while others pick and choose applicable components to utilize.

2.3.2 Fundación Paraguaya

As one of the many extensions of Junior Achievement, one initiative rose to establish itself as a leading organization in education and entrepreneurship: Fundación Paraguaya. Fundación Paraguaya exists as an influential organization founded by Dr. Martín Burt and his colleagues Steve Gross and Bill Burrus (Burt, 2013) which aims to eliminate poverty in

Paraguay and all parts of the globe (Maak, 2012). The organization was founded in 1985 to combat the astounding poverty levels prevalent in the country and has evolved since then.

Dr. Burt's original hopes have manifested in the foundation as three main branches: the microfinance program, the entrepreneurial education program, and the self-sufficient agricultural school. The microfinance program aims to provide "micro-loans" to entrepreneurs and small corporations. "Poverty is a very complex thing because on the one hand, it's a lack of assets but it's also a lack of knowledge. So you can give all the assets to the poor and they might continue being poor" (Maak, 2012). To this end, the entrepreneurial education program seeks to eliminate poverty in Paraguay by teaching students about business as a foundation for building their success. The JA financial literacy programs were introduced in 1995 (Burt, 2013), "developing school-based programs and special events... that teach the key concepts of work readiness and financial literacy... that are adapted to the reality of every community that is served" (Maak, 2012). These courses teach students knowledge about business and finance that they can implement in real-life, authentic settings.

2.3.3 *San Francisco Agricultural School*

As the most recent branch of Fundacion Paraguaya, the agricultural school employs an alternative learning model to teach business alongside traditional academic subjects. It was founded in 2003 when Fundación Paraguaya acquired the *Escuela Agricola San Francisco* from the LaSalle Christian Brothers, a Catholic charity. The building has facilities such as a telephone, drinking water, and dozens of hectares of arable land for students to practice their farming skills. The students take courses such as math and science while also working with 15 various businesses created by the school, ranging from dairy and crops to hotel services. This is to fulfill

the academic requirements of the state whilst providing extensive, real business experience to students. The businesses in turn provide revenue to fund the resources needed to maintain the functionality of the school. The school has been fully sustainable since 2007, whereas it had previously required support from the other branches of Fundación Paraguaya. Maak (2012) writes, “Martín Burt is eager to point out that this does not take anything away from the school’s success: since the funds were taken from programs that empower the poor, he feels that the poor effectively set up the school for themselves.” Through the school’s success, entrepreneurs have been created who bring their financial knowledge to their homes and economy, uplifting the town and people as a whole. The sustainability of the school improves its efficiency as it no longer has to rely on the financial backing of governments. This breeds higher standards and reputation for the school, truly improving its students and society.

2.3.4 Fondation Orient-Occident

Fondation Orient-Occident (FOO) is a nonprofit organization based in Rabat that seeks to help disadvantaged communities, mainly immigrants, integrate into Moroccan life by offering educational, social, and cultural enhancement opportunities. FOO aims at driving social innovation throughout the Moroccan population, by enabling dialogue and collaboration between people from different walks of life. The boat-shaped headquarters signify the immigrant and refugee population they support and resemble their commitment to cultural exchange and collaboration. The headquarters are home to many services, including a library where members can study and take classes on a variety of topics, ranging from Darija or French to learning soft skills and career development. The headquarters also has safe spaces where members can socialize and express their creativity and cultural identity. Furthermore, Fondation

Orient-Occident houses a preschool for its members, which is crucial for the social and academic development of young immigrants. This preschool also relieves the parents of responsibility for a few hours a day, which they use to find work and settle into life in Morocco (Fondation Orient-Occident, 2019).

In addition to the services at the headquarters, Fondation Orient-Occident also provides relief programs, such as psychological trauma training and child protection services. An example of FOO's work is evidenced when they sent teams of mental health professionals to aid local communities in the rural south of Morocco after it was hit by a devastating earthquake in 2023. Another example of the foundation's work in rural Morocco is in the small village of Dcheir. There, the foundation performed an extensive needs assessment and identified three key issues: access to water supply, education, and infrastructure/transportation. FOO recognized that much of the youth of the village emigrated abroad due to the poor working conditions. As a result, FOO advocated for job opportunities, mainly in the tourism sector, amongst the working-age population in Dcheir. The foundation directly provided aid to the village, such as through the establishment of a water tower, but also indirectly through training local actors such as the Association of Dcheir to spearhead change in the community from within. Currently, the foundation is working on initiatives supporting small cooperatives throughout Morocco that lack modern innovative business techniques and ideas.

3.0 Methods

3.1 Methods Introduction

This project aimed to evaluate entrepreneurial education curriculums based on the unique economic and educational conditions of Ighrem. Entrepreneurial education is a community-based approach, benefitting rural areas like Ighrem by promoting sustainable development and economic diversification. This education model helps individuals learn real-world skills and gain an understanding of how businesses operate, including challenges that can be encountered. As a result, a new networking system is made more accessible, including experienced mentors and business experts. Additionally, it facilitates the development of problem-solving and critical-thinking abilities, which are important in social settings.

The following question guided the team's research:

- How can entrepreneurship education be adapted to the specific needs and environment of Morocco's rural communities while taking into account language, literacy, and cultural structures to support financial success?

The research team determined four primary objectives:

- (1) Identify limitations and challenges associated with introducing an entrepreneurial education model, considering cultural norms, economic conditions, and current educational infrastructure.
- (2) Conduct a needs assessment to define the population and identify priority issues concerning the economy and trade.
- (3) Engage with key stakeholders including cooperative members, educators, business owners, and elected officials to gather insights and gauge interest levels.

- (4) Design an entrepreneurship training program for a women's almond cooperative or any rural community to market an identified product for financial success.

To achieve these objectives, the researchers conducted interviews and reviewed archival research including organizational documents provided by Fundación Paraguaya outlining how to inspire people to learn about how the economy functions, its influence in their daily lives, and how to leverage it to improve daily lives as a driver of social and economic development. These documents serve as a guide on how to outline a business, and how to analyze the current market and establish actions to pursue in the future to both produce and promote a product, service, or project. Additionally, the research team conducted an ethnography to better understand the Moroccan worker's experience. These first-hand accounts were carried out with the intent to explore attitudes toward work. The research team interviewed members of the Ighrem and other Moroccan communities, including community leaders, and conducted in-person interviews with artisans and merchants of Morocco. Using these techniques, the research team discovered significant and unexpected insights about the Moroccan work system.

3.2 Data Collection: Interviews

The research team conducted one-on-one and group interviews lasting approximately 45 minutes each. These interviews were conducted via WhatsApp phone calls, Zoom, and in-person. The research team met with city officials, experts, foundations, and a member of a cooperative in Rabat. They originally intended to interview six to eight members of the almond cooperative in Ighrem, however, due to shifting circumstances, geographic location, and language barriers, the

research team was limited to interviewing one member of a different cooperative. See Appendix B for interview questions.

3.2.1 Consent and Confidentiality of Participants

The confidentiality of the participants' identities was protected throughout the interview process. Prior to every interview, the research team ensured that participants had a copy of the approved consent form for them to review, acknowledge, and sign. See Appendix C for the approved consent form used by the research team. If an electronic signature could not be obtained, the research team members ensured verbal consent was clearly stated at the beginning of the interview recording. To record the meetings, the research team utilized the Zoom platform. After the successful transcription of each meeting, the recording was permanently deleted to protect confidentiality among individuals and research team members. The research team explicitly named participants who were subject experts and omitted the names of local community members who volunteered for this study.

3.2.2 City Officials

The initial form of data collection was to obtain information about Ighrem, including demographics, infrastructure, the state of the school system, and the needs of the town. Initially, the methodology to acquire this data was to interview various members of the town. As contact with the community members occurred late with respect to the available data collection period, this method was replaced by a large group meeting with various representatives of the community. Yousra Doiron, the team's sponsor, provided a contact for the town to the research team, and the contact arranged this meeting to help support the data collection. Yousra Doiron,

city officials, two association representatives, and the contact were present. The interview format occurred as a WhatsApp call between the research team, Doiron, and the contact, with the other individuals present in the room with the contact. Due to the language barrier between English and Darija, Doiron served as a translator between the research team and the officials. The call was recorded with the consent form being read and translated by Doiron as justified above.

3.2.3 Dr. Alisha Jean-Denis

As part of conducting an assessment to identify priority issues concerning the economy and trade, the research team investigated the prior implementation of product line development, marketing, and product sales success, with women in rural communities.

Dr. Jean-Denis is a passionate and knowledgeable subject expert whose work is focused on cultural storytelling, strengthening human connection through social justice activism, and the development of strong support networks. With over 20 years of experience as a director and consultant in local and global markets, Dr. Jean-Denis is known for her involvement in Project Buvuumu (Courage). The mission of Project Buvuumu is to explore the journeys of post-conflict Ugandan women through a community-based participatory approach, to hone their artistic abilities as a means to economic empowerment. These women and their children are survivors of the 1993 Ugandan Civil War. They have used their knowledge, experience, and hands to create artwork to financially support their families. According to Dr. Jean-Denis, their hands are symbolic —carrying scars and wounds of their journey and survival. These hands simultaneously have become their vehicle for the education of their children, food security, and healthcare support and accessibility. Their hands have a story to tell of how they overcome trauma through the art of “beading.”

Dr. Jean-Denis was a valuable asset to consult due to her extensive experience in aiding rural towns in Uganda with product development. The interview format occurred as a Zoom call, with the meeting recorded after the team obtained Dr. Jean-Denis' consent to record through her signature of the approved consent form.

3.2.4 Dr. Martín Burt

Another objective was the evaluation of introducing an entrepreneurial education system to the Almond Cooperative. Dr. Burt was an ideal consultant regarding this topic due to his extensive involvement in Fundación Paraguaya, stemming from the Junior Achievement learning models. Not only could he provide extensive implementation plans, but also learning advice and resources to further consult. Questions were guided toward understanding how to successfully introduce a sustainable entrepreneurial educational model. The interview format occurred as a Zoom call and consent was acquired prior to the meeting.

3.2.5 Fondation Orient-Occident Representative

Established in 1992, Fondation Orient-Occident seeks to eliminate discrimination, but more pertinent to the project, one of its major goals is to aid rural towns with education and sustainable development. Much of their work has been contributing better infrastructure to communities that the government has not been able to provide for, from water towers to pipelines to school development. The goal of the meeting with the representative was to better understand the infrastructure and educational work that the foundation provides for rural communities, specifically cooperatives. Additionally, the research team wanted to establish what

aspects were community-driven and what aspects were provided by the foundation. This interview was conducted in person and consent to record was received verbally.

3.2.6 Community Member of the Dahab Souss Cooperative

A member of the Dahab Souss cooperative was also interviewed to gain her perspectives on working in a cooperative and to better understand any experience she has in entrepreneurial education. The research aimed to gain greater insight into how a cooperative operates and how members might respond to outside initiatives and possible changes to the way things operate. By engaging with this individual, the research team sought to gain insights into the challenges and successes inherent in operating within a small-scale almond cooperative, similar to the situation of the almond cooperative in Ighrem. Specifically, the interview provided valuable insight into the experience of women working in cooperatives in Morocco. This interview was conducted in person and consent to record was received verbally before the beginning of the conversation.

4.0 Findings

4.1 Findings Introduction

Findings in this study were derived from interviews with subject experts, community figures, non-profit organizations, as well as supporting material from existing programs of select non-governmental organizations (NGOs). Additionally, the evolution of the study under extenuating circumstances provided a serendipitous understanding of the inception of a community service program. Well-crafted and relevant programs cannot be easily inserted or overlaid without consideration of the close-knit character of rural communities, their language, socio-political hierarchy, physical access, and customs.

The first two themes identified were related to the importance of conducting a needs assessment as well as the cultural importance and understanding of community involvement. These two factors are foundational for establishing a successful program in a tight-knit community such as Ighrem. Additionally, the team identified education, specifically marketing education, as an area of focus for any potential program or school. Education comes in the form of lessons and curriculum that act as the spine of a program, but it also comes in the form of learning soft skills, building emotional intelligence, fostering critical thinking, and promoting collaboration that will help students excel in networking. Finally, after talking to city officials and the Dahab Souss cooperative worker, the team identified marketing and product development as critical areas of improvement. Enhancing the marketing success of the almond cooperative in Ighrem is crucial for scaling the business and expanding its reach to new markets beyond the rural landscape of its headquarters. This growth not only benefits the cooperative itself but also positively affects the entire Ighrem community. Improved marketing strategies will

not only boost the almond cooperative's profits but also contribute to the economic prosperity of Ighrem by creating job opportunities and stimulating the local economy.

4.2 Needs Assessment

An interview with local government officials, the president of the town, educational leaders of Ighrem, and Yousra Doiron's contact, was essential to better understand the educational and economic environment of Ighrem.

The team discovered that the town is mainly in need of resources for accessible water and transportation. Most families in Ighrem are still relying on water wells for their supply, which is extremely difficult and inefficient. The city officials validated that there are two schools in Ighrem: a primary school and a secondary school. These two schools support Ighrem and 17 surrounding villages. Due to the remoteness of Ighrem, and the lack of infrastructure, students from in and around the town are also struggling to find reliable transportation that ensures frequent school attendance. Furthermore, the city officials informed the research team that Ighrem's greatest export, and economic contributor, is a local almond cooperative. The team also learned that the cooperative is currently struggling to expand its business beyond the local communities around Ighrem. Because the team was not equipped with resources for alleviating water and transportation issues, the research team decided to focus on helping the almond cooperative grow its business in the form of enhanced marketing techniques.

Dr. Burt, Dr. Jean-Denis, the representative from Fondation Orient-Occident, and the Dahab Souss almond cooperative worker in Rabat all highlighted the importance of conducting a needs assessment as the first step. The importance of a needs assessment stems from the fact that any project must serve a clear and defined purpose which is usually something that the

community lacks, and most importantly, is identified by the members of the community.

Although the meeting with the city officials was helpful in understanding the landscape that shapes Ighrem, a more in-depth needs assessment must be conducted before any program, curriculum, or plan of action can be drafted.

An accurate needs assessment can come in the form of surveys or interviews with the almond cooperative employees, both in management and worker positions, as well as townspeople from various ages, genders, occupations, and socio-economic statuses. A successful needs assessment must be unbiased and inviting, which means anonymity must be preserved and protected. By offering a welcoming environment, employees participating in the needs assessment will be as honest as possible about their concerns, suggestions, and preferences. Moreover, involving participants of diverse backgrounds in the needs assessment process fosters inclusivity and ensures that future initiatives benefit the community as a whole and not a select sub-demographic.

A needs assessment can investigate topics of poverty, level of academic education, and other limiting factors that can affect the financial success of an individual. Additionally, a needs assessment can also investigate topics an individual wants to learn, financial goals, and business ideas. To gain an accurate depiction of how the community members feel about the current governance of the town, a needs assessment must also inquire about opinions, attitudes, and satisfaction levels regarding structures, services, and policies. This includes assessing perceptions of transparency, accessibility, and effectiveness of the local government, as well as areas where the community feels there is room for improvement. Future plans and projects will only be achieved with collaboration between community members and members of the

governing body. Therefore it is important to gauge the level of trust the community members hold toward their politicians and leaders.

4.3 Community Involvement

A community is described as an all-encompassing collection of two fundamental characteristics. The first is the notion of a community setting where key experiences or activities are shared (Broom and Selznik, 1979; Hammudah Abdalati, 1986; Nisbet, 1967). A common sense of identification and belonging is the second component: "...all forms of relationship that are characterized by a high degree of personal intimacy, emotional depth, moral commitment, social cohesion, and continuity in time" (Nisbet, 1967). It is found in one's neighborhood, belief, country, race, occupation, or shared purpose (Nisbet, 1996). It is commonly accepted that a group of people's shared sense of identity, involvement, actions, and past experiences define their community.

The practice of recognizing and voicing a community's needs and perspectives on a particular issue is known as community involvement. Then, to address the wants and needs of the community and take into account opinions, collective action is undertaken (Haris, 2007; Nisbet, 1967). Community involvement ranges from individuals who are actively involved in the community and can make decisions regarding specific initiatives, legislation, or operations, to those who passively receive advantages. Engagement consists of organizing, implementing, assessing, and earning the benefits of the endeavor. The process of including the local population in an area to work cooperatively in an organization's development or initiative operations is referred to as community participation. It is believed that rather than the program's expected experts or appointed specialists, people in the community have greater insight into how to

resurrect ideas, efforts, and resources to stimulate the activities of a program. While participation is crucial to developing and carrying out solutions, the community still needs outside support (Reid, 2000; Rifkin and Kangere, 2001; Haus, 2004; Haris, 2007; Mathbor, 2008).

The active participation and engagement from community members, specifically city officials who govern and set the course for accepting and carrying out entrepreneurial education initiatives, ensure the success of such initiatives. Through the research team's findings, efforts that have strong backing and support from the local community demonstrate unity and effectiveness. An encompassing theme found across the input from various groups, including Dr. Jean-Denis, Dr. Martin Burt, the local Dahab Souss cooperative worker, and the Fondation Orient-Occident representative, is that a community adopting initiatives collectively and participating actively can build scalable opportunities. Valuing community-driven approaches, like transparent decision-making processes and active participation in curriculum development, encourages rural communities' enthusiasm and sense of autonomy over learning about entrepreneurship. Communities can generate enormous potential for development and prosperity when working on projects together, whether the objective involves backing local cooperatives, boosting economic diversification, or putting entrepreneurial education programs into action.

Community-driven approaches, including participatory decision-making processes and involvement in curriculum design, foster a sense of ownership and commitment among rural residents toward entrepreneurial education programs. With backing and support, individuals feel empowered to take chances and overcome obstacles. Individuals feel more confident in their abilities with a safety net of support, guidance, and resources readily accessible. People who feel empowered possess a greater sense of agency and independence, enabling them to grow professionally while contributing to the well-being of their communities. People who directly

benefit from development initiatives are more inclined to participate and stay dedicated to them. The strength of a participatory structure is determined by the culture, beliefs, norms, values, and power relationships of the social organization (Reid, 2000; Haus, 2004; Mathbor, 2008).

4.4 Cultural Sensitivity

A critical factor in implementing and crafting an entrepreneurial education is maintaining cultural sensitivity. The concept of "culture" can frequently be ambiguous and lacks a definite meaning. Oftentimes, socioeconomic position or other demographic variables, such as ethnicity or racial background, are an equivalent of culture, narrowing the definition of culture in some instances (Hood, 2023). Throughout the study, the research team views "culture" as referring to the knowledge, ideas, arts, religions, laws, social behavior, structures, and traditions that distinguish human communities.

The research team's findings indicate individuals are more receptive and accepting of efforts that respect and reflect their local cultural customs, and languages. There is considerable research that underlines the importance of prioritizing cultural customs and principles when developing and evaluating interventions (Hood, 2023). Local or regional culture may serve as an anchor for development, therefore it is important to have local connections. It is important for research teams to develop culturally sensitive community engagement methods, which focus on cultural values including family and respect. Researchers looking to start culturally informed community engagement efforts build bonds across communities by considering such cultural values and adopting a culturally aware approach to community involvement. This approach promotes social cohesiveness and collective efficacy by bringing researchers and communities that have experienced historical "othering" together (Powell & Menendian, 2017).

Dr. Jean-Denis worked with 28 women artisans from Uganda. The majority of her time in Africa was spent observing various trades and craftsmanship. One art form of interest among women was recycled paper bead necklaces. These necklaces are widespread in the market and are not seen as a unique offering among consumers and makers given their similar designs and mass production. Women were collectively selling the same version of the same product, and when walking through the Ugandan marketplaces, it was hard to distinguish between vendors. Before fleeing the war, the women would learn the art of beading in their native villages, and when finding other refugees continued to use this craft as a means of survival. Dr. Jean-Denis connected with women's networks, making on-ground ties to further develop her project efforts. The product being sold in the market was also tied to a cultural story, and that story is often what needs to be shared when marketing the product. Dr. Jean-Denis spent three weeks in the country, on the ground, going directly into women's homes in the refugee areas, which allowed her to familiarize herself with the women and learn more about the community being served, alongside the stories shared there. Post-conflict narratives were the stories being sold to introduce artisans to the U.S. market. The project has inspired women to actively participate, echoing Dr. Jean-Denis's sentiment that those involved in the endeavor are energized by the contributions being made and perceive the research team as collaborators rather than saviors. Dr. Jean-Denis emphasized that outsiders should not prioritize their own agendas and the benefits they hope to acquire, as that will not be perceived well by tight-knit communities. Learning along the way first-hand through personal conversation and collaboration is how to build a relationship of trust.

4.5 Marketing Education and Product Development

Among the community members the research team interviewed, marketing was established as a common struggle among cooperatives. In the meeting with the city officials, they identified marketing as the issue that the almond cooperative in Ighrem was struggling with. The member of the cooperative in Rabat also identified marketing as the biggest challenge hindering the economic growth of the cooperative. She said the cooperatives with the biggest reach are well-known and have a professional presentation. They have a larger social media presence and market their products well through online channels including Instagram and Facebook. The bigger cooperatives also take professional photographs of their products and often have a supervisor in charge of marketing, things that smaller cooperatives, such as the Dahab Souss cooperative, lack. According to the representative, the cooperative she works at provides training on how to sell products and business, but not much in marketing. She said that they would appreciate both being taught marketing themselves and having an outside source come in and help them set up a marketing platform and social media outlets. She followed this by saying that there are people like her who have ideas and projects but who don't know how to get started with their product development.

Dr. Jean-Denis was able to provide insight into strategies for bringing products to international markets. In her work with Uganda, she said the first thing she did was learn about the community she was working with and their stories. In trying to sell a product that is already on the market, Dr. Jean-Denis said to think about “the cultural story that I want to share”. Essentially, how to make this product unique through the story it tells about the workers and the cultural significance. She also said, that “if you’re going to sell something in the U.S., it has to have quality”. When consumers are looking at multiple versions of the same item, the thing that

will make a certain product stand out is its quality and testing. Another point Dr. Jean-Denis emphasized during marketing was understanding the target audience for the product. When discussing the potential of different forms of social media as a platform for marketing, the different age ranges that each platform targets are essential to consider. For instance, if the target demographic is older persons, Facebook is probably a good place to start, whereas if teens or young adults are the targets, Instagram or TikTok might be an optimal choice.

Dr. Burt had many insights regarding the almond cooperative and provided important recommendations relative to supporting product development. He suggested four key questions to ask: “Who is my market? Who is my competition? Why or how am I going to be better than my competition? What is my value proposition?” By asking these questions, a business can assess its state in any market they are in, be it domestic or international. Dr. Jean-Denis suggested that to improve sales it would be advisable to start in the country and surrounding towns where the product is made. Despite prospects of greater profitability abroad, steps to increase profits should be increased slowly over time. Advice from Dr. Burt insisting upon a demand-driven market goal promotes this idea. Whilst local markets are safer to start in, in the case of almonds, almost all of Morocco prefers the American-produced product over in-country. In America, the prospect of exotic foodstuffs sourced in rural Morocco by a woman’s cooperative has greater chances of success. Summatively, there is a greater demand for the cooperative's product internationally compared to locally within Morocco.

Dr. Burt also pointed out an effective strategy in analyzing the current marketing state of the cooperative, by simply examining the other almond cooperatives present in the desired market. To address the more nebulous issue of educating individuals in the cooperative about

marketing ideas and connected topics, Dr. Burt provided an extensive list of sources to consider consulting to acquire resources and methods to aid in education.

Beyond entrepreneurial education, the Fondation Orient-Occident representative highlighted the importance of education in developing both technical and soft skills. Soft skills they teach include topics such as communication, teamwork, how to present a product, and how to be confident as a woman. When the cooperative member in Rabat was asked what she wanted to learn if given the opportunity, the first thing she said was English. Marketing education is important and relevant, but having other educational opportunities is a clear need in the community.

5.0 Discussion

5.1 Discussion Introduction

The primary objective of this study was to evaluate the practicality and viability of introducing an entrepreneurial training program in the town of Ighrem. Additionally, the research team aimed to provide actionable recommendations for future initiatives based on the findings and insights gathered through the interviews conducted. The team identified three overarching themes found from interviewees that must be taken into account when developing an entrepreneurial education initiative. These themes, conducting a thorough needs assessment, understanding community involvement and cultural sensitivity, and marketing and product development, have guided the research team's recommendations.

In the following section, the team will highlight the challenges and limitations that have appeared throughout the course of the research study. Additionally, the team will expand upon the deviation from the initial planned data collection and methodology approach, exploring the course of events and the rationale behind the shift in plans. Moreover, insights and suggestions derived from will be elaborated, aimed at guiding future endeavors, whether they are extensions of the ongoing project focusing on Ighrem or other projects with a similar scope. The research team will also highlight resources that would be helpful for the town of Ighrem to consider for further assistance.

5.2 Limitations

From the start of this project, there was a known set of challenges the research team encountered. The distance from Ighrem limited opportunities to interview community members of Ighrem and the almond cooperative. The language barrier presented itself as a constant

hindrance and sometimes fully impeded the team in all levels of communication with interviewees. As a consequence of this challenge, the team struggled in explaining the project goals, arranging interviews, asking questions, and extracting meaningful data. Although the research team had access to a translator, he was unavailable most of the time due to personal, work, and other project' needs. Yousra Doiron, the team's sponsor, made herself available when her schedule allowed, however, she was inaccessible to the team more often than not.

The presence of an after-school educational program in Ighrem and the town's lack of interest in an additional school conflicted with the team's original project goals and scope and instigated a tremendous shift in the action plan derived prior to the team's arrival in Morocco. The project shift introduced an upheaval of the background research the team had to acquire, impeding research time and effectiveness in the presentation of a new topic. Not only were cooperatives an unfamiliar topic to the research team, but the team was also unable to communicate with the almond cooperative in Ighrem to collaborate with. This prevented the team from acquiring any real empirical data, as hoped for originally with a variety of demographics in the town, and secondly with the cooperative workers and association members.

5.3 Recommendations

5.3.1 Consideration for Future Community Projects

There are certain preliminary actions that need to be considered to successfully support a project of this scope. The first step that should be taken, prior to background research, is verifying that the community involved will accept the identified project. In the case of the original project, the team believed that they would be working with the village of Ighrem to provide support for starting a new sustainable school. However, upon first meeting with the town

it was established that Ighrem was not looking to start a new school. Instead, they were interested in providing infrastructure for their currently established schools. The experts the research team spoke to all highlighted the need for the project to be community-driven, so it is imperative that the project come from the community, not an outside source.

This aligns with the second consideration, the necessity of administering a needs assessment. A needs assessment can be conducted in a number of ways, however, the important outcome is to clearly establish exactly what the community is in need of. This will allow for the community-driven approach that is necessary for a project to succeed.

Based on insight from experts and roadblocks the team encountered, the following are additional factors to consider before moving forward with a similar project:

- Be prepared for language barriers and make sure to have a translator.
- If the location is not easily accessible, make it logistically possible to make one trip to be onsite and speak to the community in-person.
- Have a liaison on the ground who speaks the local language and dialect(s) and can translate for the team.
- Be cognizant of the culture of the community.
- Frequently in smaller communities, the local government will want to be involved in bringing the project to fruition. This could lead to political ramifications that were not initially considered.
- Active sponsor support is imperative for the project to progress in a timely fashion.

5.3.2 Future Projects

There is an opportunity for future projects based on the research team's findings and topics identified by community members. The considerations outlined in section 5.3.1 would need to be taken into account, however, based on the team's preliminary needs assessments, the following topics can be considered for future work:

- Transportation systems in rural communities.
- Running water in rural communities.
- Work with Fondation Orient-Occident on their projects relating to rural community work.
- Marketing through social media platforms for cooperatives.

5.4 Project Deliverables

In better understanding the needs, economy, and demographics of the town of Ighrem, the research team identified the almond cooperative in Ighrem as the primary target of a potential entrepreneurial training program inspired by the Junior Achievement (JA) model as well as Fundación Paraguaya's sustainable vocational school model.

At the end of the project, the research team created an infographic (see Appendix D) outlining a potential entrepreneurship education program that is intended to help grow the business of the almond cooperative in Ighrem. Although the infographic is tailored toward the almond cooperative, the research team ensured that it is general enough to apply to other artisans and businesses in Ighrem.

The infographic, presented to project sponsors, included helpful resources that leaders of the town can utilize to ensure the support of the implementation and sustainability of an

entrepreneurial training model. The proposed plan provides Ighrem with logistics on how to potentially run the program including times, location, setting, facilitators, and sponsors. Potential lessons, skills, and concepts that should be taught (both technically related to marketing and financially related to running a successful business) are included. The deliverable encompasses a spectrum of recommended competencies, ranging from soft skills such as effective communication, professional self-presentation, and etiquette, to technical skills that include learning professional software applications and graphic design proficiency. Finally, the proposed plan highlights the next steps that must be addressed, with the most important being the successful completion of a needs assessment on Ighrem conducted through a liaison who is ideally a local community member. By delivering these project components, the research team aims to equip the almond cooperative and other businesses in Ighrem with the tools, knowledge, and support needed to foster entrepreneurship, drive economic growth, and create sustainable livelihoods within the community.

6.0 Conclusion

The primary objective of this study was to evaluate the practicality and viability of introducing an entrepreneurial training program to the town of Ighrem. The successful completion of the original project was presented with multiple challenges including physical distance from the project location, language barriers, and a shift in the project's scope. Additionally, the research team aimed to provide actionable recommendations for future initiatives based on the insights gathered through the interviews conducted. The research team's recommendations were guided by three leading ideas that emerged from interviewing scholars, experts, and community members. Participation in the community, cultural sensitivity, and marketing and product chain development were identified as key areas to address. Conducting extensive needs assessments and focusing projects around servicing a community are vital first steps in guaranteeing work is aligned with local interests. Support along with the long-term sustainability of projects can be eased by cooperation with local governments and city officials. Recommendations for future project endeavors involve collaborating with Fondation Orient-Occident, scaling cooperatives through marketing strategies, and supplying water and transportation in Ighrem and other rural communities. Before undertaking a project, and for implementation to be productive, it is imperative to address linguistic barriers, guarantee accessibility to project destinations, and secure local liaisons, particularly when dealing with culturally diverse regions. The project deliverable is an infographic, which offers an outline of the prospective entrepreneurial education program geared toward the almond cooperative in Ighrem. The entrepreneurial training model proposed is based on programs like Junior Achievement and Fundación Paraguaya's sustainable vocational school model. The infographic includes facilitator organizations and concepts and skills to be used for instruction. The

recommendations and deliverable are a roadmap for launching relevant projects, expedited by the research team providing various resources and connections. These sources aid in equipping the almond cooperative and other local businesses with the assets and support for scaling their economy while focusing on long-term economic and financial sustainability.

7.0 References

- Abahous, H., Ronchail, J., Sifeddine, A., Kenny, L., & Bouchaou, L. (2018). Trend and change point analyses of annual precipitation in the Souss-Massa Region in Morocco during 1932–2010. *Theoretical and Applied Climatology*, 134(3–4), 1153–1163.
<https://doi.org/10.1007/s00704-017-2325-0>
- Abuya, B. (2012). Why do pupils dropout when education is ‘free’? Explaining school dropout among the urban poor in Nairobi.
https://www.researchgate.net/publication/236902249_Why_do_pupils_dropout_when_education_is_'free'_Explaining_school_dropout_among_the_urban_poor_in_Nairobi
- Accueil - Fondation orient. Fondation Orient-Occident. (2019).
<https://www.orient-occident.org/?lang=fr>
- Anouar , S. (2022, June 30). Moroccans prefer “cheaper” American almonds despite self-sufficient production. <https://www.moroccoworldnews.com/>.
<https://www.moroccoworldnews.com/2022/06/349998/moroccans-prefer-cheaper-american-almonds-despite-self-sufficient-production>
- Auletto, A. (2017). Gender Inequity in Moroccan Secondary Education: A Mixed Methods Case Study. *Reconsidering Development*, 5(1). Retrieved from
<https://pubs.lib.umn.edu/index.php/reconsidering/article/view/909>
- Bouhazzama, M., & Said, M. (2021). Why are we not always witnessing a take-off of the Moroccan cooperative model? *E3S Web of Conferences*, 229, 1027-.
<https://doi.org/10.1051/e3sconf/202122901027>
- Boukdir, Y. (2011, September 1). إغرم. جمعية أفيان للتنمية والتعاون.
<https://afayane.com/%d8%a5%d8%ba%d8%b1%d9%85/>

- Broom., L., Selznick., P. (1979). Essentials of sociology: From Sociology - a text with adapted readings, sixth edition. New York: Harper and Row
- Burt, M. (2013, October 31). The “Poverty Stoplight” approach to eliminating Multidimensional Poverty: Business, Civil Society, and Government Working Together in Paraguay. Innovations: Technology, Governance, Globalization. <https://muse.jhu.edu/article/524193>
- Charfi, A. (2009, September). The role of emigrants in Rural Development Associations in Morocco. <https://www.tandfonline.com/doi/full/10.1080/13691830903165857>
- Division of powers - Morocco Introduction. (2015). <https://portal.cor.europa.eu/divisionpowers/Pages/Morocco-Introduction.aspx>
- El Alaoui, A. (2021, September 21). Students’ perceptions of early school leaving: A Moroccan case study. Social Sciences & Humanities Open. <https://www.sciencedirect.com/science/article/pii/S2590291121000991#bib5>
- El Jebbari, Z. (2015, January). Distribution Channel for Moroccan artisans. ResearchGate. https://www.researchgate.net/publication/283620268_Distribution_channel_for_Moroccan_artisans
- El Oumlouki, K., Moussadek, R., Douaik, A., Iaaich, H., Dakak, H., Chati, M. T., Ghanimi, A., El Midaoui, A., El Amrani, M., & Zouahri, A. (2018). Assessment of the Groundwater Salinity Used for Irrigation and Risks of Soil Degradation in Souss-Massa, Morocco. Irrigation and Drainage, 67(S1), 38–51. <https://doi.org/10.1002/ird.2209>
- El Midaoui, A., El Amrani, M., & Zouahri, A. (2018). Assessment of the Groundwater Salinity Used for Irrigation and Risks of Soil Degradation in Souss-Massa, Morocco. Irrigation and Drainage, 67(S1), 38–51. <https://doi.org/10.1002/ird.2209>

- Gagliardi, S. (2019). Indigenous peoples' rights in Morocco: subaltern narratives by Amazigh women. *The International Journal of Human Rights*, 23(1–2), 281–296.
<https://doi.org/10.1080/13642987.2019.1574757>
- Hammudah., A. (1986). *Islam in Focus*. Saudi Arabia: Ittihad Islami Al-Alami
- Haris, A., W. (2007). *Penglibatan Masyarakat Tani Dalam Pembangunan Komuniti*. Kuala Lumpur: Penerbit Universiti Malaya
- Haus, M. (2010, December 1). *Urban Leadership and Community Involvement: Ingredients for Good Governance?*. Sage Journals.
<https://journals.sagepub.com/doi/10.1177/1078087410388867>
- Hood, S. (2023, January). *Culturally informed community engagement: Implications for inclusive science and health equity*. National Center for Biotechnology Information.
<https://www.ncbi.nlm.nih.gov/books/NBK592587/>
- Houdret, A. (2020.). Full article: *The Rural Social Contract in Morocco and Algeria ...*
<https://www.tandfonline.com/doi/full/10.1080/13629387.2020.1848560>
- Jaouen, M. (2023). *The Indigenous World 2023: Morocco*. IWGIA.
[https://www.iwgia.org/en/morocco/5058-iw-2023-morocco.html#:~:text=This%20means%20that%20the%20Amazigh,ACM\)%20to%20defend%20their%20rights.](https://www.iwgia.org/en/morocco/5058-iw-2023-morocco.html#:~:text=This%20means%20that%20the%20Amazigh,ACM)%20to%20defend%20their%20rights.)
- Levy, H. (n.d.). Worldbank.
<https://documents1.worldbank.org/curated/en/099094102272331986/pdf/P1796370ef3e7a0609310020fd7be7cbb2.pdf>
- Llorent-Bedmar, V. (2014, December 2). *Dysfunction and educational reform in Morocco*. Asian Social Science. <https://www.ccsenet.org/journal/index.php/ass/article/view/42924>

- Maak, T., & Stoetter, N. (2012, August 30). Social Entrepreneurs as Responsible Leaders: “Fundación Paraguaya” and the case of Martín Burt - Journal of Business Ethics. SpringerLink. <https://link.springer.com/article/10.1007/s10551-012-1417-0#Sec4>
- Marsiglia, F. F., & Booth, J. M. (2015, July 1). Cultural Adaptation of Interventions in Real Practice Settings. PubMed Central. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4512185/>
- Mathbor, G., M. (2008). Effective Community Participation in Coastal Development. US: Lyceum Books, Inc. Retrieved April 20, 2024. http://lyceumbooks.com/pdf/Effective_Community_P_Chapter_02.pdf
- Momo. (2022, April). Erratum for ‘A systematic review of the literature on the causes of early school leaving in Africa and Asia’ by Momo et al. . <https://bera-journals.onlinelibrary.wiley.com/doi/10.1002/rev3.3330/>
- Montanari, B., Handaine, M., & Id Bourrous, J. (2023). Argan Oil Trade and Access to Benefit Sharing: A Matter of Economic Survival for Rural Women of the Souss Massa, Morocco. Human Ecology : An Interdisciplinary Journal, 51(5), 995–1007. <https://doi.org/10.1007/s10745-023-00453-6>
- Naji, M. (2012). Learning to Weave the Threads of Honor: Understanding the Value of Female Schooling in Southern Morocco. Anthropology & Education Quarterly, 43(4), 372–384. <http://www.jstor.org/stable/23359075>
- Nejjari, I., & Hassine, A. (2023). Do Moroccan Agricultural Cooperatives Have a Social Responsibility? An Exploratory Qualitative Study. American Journal of Agricultural Science, Engineering, and Technology, 7(1), 44–52. <https://doi.org/10.54536/ajaset.v7i1.1156>

Nisbet, R. A. (1996). *The Sociological Tradition*. New York: Basic Books.

Nisbet, R. A. (2005). *Sociological tradition*. University Presses of France.

OECD. (2023, December 5). Morocco | factsheets | OECD PISA 2022 results. PISA 2022

Results: Factsheets Morocco.

<https://www.oecd.org/publication/pisa-2022-results/country-notes/morocco-10dfcb74>

Perry, W., Rappe, O., Boulhaoua, A., Hassan Loux, L., Elhouss, Y., Ait Ahssain, H., Ait Barich,

Z., Akhiyat, H., Aznague, T. A., & Hraïd, S. (2019). Argan oil and the question of empowerment in rural Morocco. *The Journal of North African Studies*, 24(5), 830–859.

<https://doi.org/10.1080/13629387.2018.1542596>

Powell, J. A., & Menendian, S. (2018, August 29). *The Problem of Othering: Towards*

Inclusiveness and Belonging. Othering and Belonging.

<https://www.otheringandbelonging.org/the-problem-of-othering/>

Reid, J., N. (2000). *Community Participation: How People Power Brings Sustainable Benefits to Communities*. Retrieved April 20, 2024.

<http://www.rurdev.usda.gov/rbs/ezec/Pubs/commpartcrept.Pdf>

Rifkin, S., B. & Kangere, M. (2001). *What is Participation?*. Retrieved April 20, 2024.

www.asksourc.info/cbr-book/cbr03.pdf

Smits, J., & Huisman, J. (2013, August). Determinants of educational participation and gender differences in education in six Arab countries.

<https://journals.sagepub.com/doi/10.1177/0001699313496259>

Souss Massa 202 - High Commission of Planning. (2020).

<https://www.hcp.ma/region-agadir/docs/monographie%202020.pdf>

Sukarieh, M., & Tannock, S. (2009, November 17). Putting school commercialism in context: a global history of Junior Achievement Worldwide. Taylor & Francis Online.

<https://www.tandfonline.com/doi/abs/10.1080/02680930903294636>

USAID.gov. (2019, May 7). Education: Morocco. Archive - U.S. Agency for International Development. <https://2017-2020.usaid.gov/morocco/education>

Walters, S., Bouharroud, R., Mimouni, A., & Wifaya, A. (2018). The Deterioration of Morocco's Vegetable Crop Genetic Diversity: An Analysis of the Souss-Massa Region. *Agriculture (Basel)*, 8(4), 49-. <https://doi.org/10.3390/agriculture8040049>

Wilson, S.J., Tanner-Smith, E.E., Lipsey, M.W., Steinka-Fry, K. and Morrison, J. (2011), Dropout Prevention and Intervention Programs: Effects on School Completion and Dropout among School-aged Children and Youth. *Campbell Systematic Reviews*, 7: 1-61.

<https://doi.org/10.4073/csr.2011.8>

8.0 Appendices

Appendix A

The Artisans of Morocco

Morocco possesses a rich history of craftsmanship, trades, and artisans that stretch centuries long. There is a diverse array of trades and crafts that have flourished throughout the nation and contribute to sustaining the livelihoods of millions, being a dominant economic sector for the country. The first civilization residing in Morocco was the Berbers, who have been considered to be predecessors in craftsmanship. The remarkable workmanship seen in traditional Moroccan goods including ceramics, textiles, metalwork, woodwork, and leather goods, all constitute the most notable features of Morocco's artisanal history. These deeply ingrained skills have been handed down through many generations, commonly among households, which emerged with the arrival of the Arabs during the era of Islamization. To sell their products, tradespeople secure themselves in local bustling bazaars to display their vibrant and uniquely patterned authentic crafts, in hopes of drawing tourists and locals for business. The artisanal sector also fuels Morocco's export industry, as goods are shipped internationally, supporting the trade balance and foreign exchange revenue. In Morocco, 20% of the population is composed of impoverished craftsmen who lack access to necessities, according to the Ministry of Handicraft and Social Solidarity Economy, over 20% of the Moroccan population is employed in the handicraft sector (El Jebbari, 2015). The handicraft sector represents 9% of the nation's GDP, which is considered a significant percentage (El Jebbari, 2015). Entering the spaces of native works people can connect researchers to on-ground observations, and become further engaged with culture.



Image of traditional ceramics in a local pottery shop in Chefchaouen, Morocco.

Ceramics

Ceramics, usually pottery, are crafted for both aesthetic and functional use from clay. Ceramics in Morocco are known for their elaborate hand-painted designs and traditional cooking vessels known as tajine, where dishes are cooked.



Image of rugs for sale in the streets of Bazaar in Rabat, Morocco.

Textiles

Popular textiles in Morocco often are crafted with colorful motifs and intricate patterns, oftentimes in the form of blankets, rugs, pillowcases, and carpets. Textiles are often carried out using traditional looms, or completely using handwoven techniques of various stitching and patterns passed down through generational knowledge. The kaleidoscope of symbols often carries meanings, woven into the fabric creating stories with each stitch.



Image of a woodworker sanding a wooden box in Fes, Morocco.

Woodworking

Moroccan woodworking, known as Zouak, is the process of forming and carving wood to make architectural features, furniture, and décor. Moroccan woodworkers are renowned for their carefully whittled geometrical patterns and ornate wood carvings that decorate mosques, palaces, restaurants, and homes.



Coppersmith shop in Bazaar in Rabat, Morocco.

Metalworking

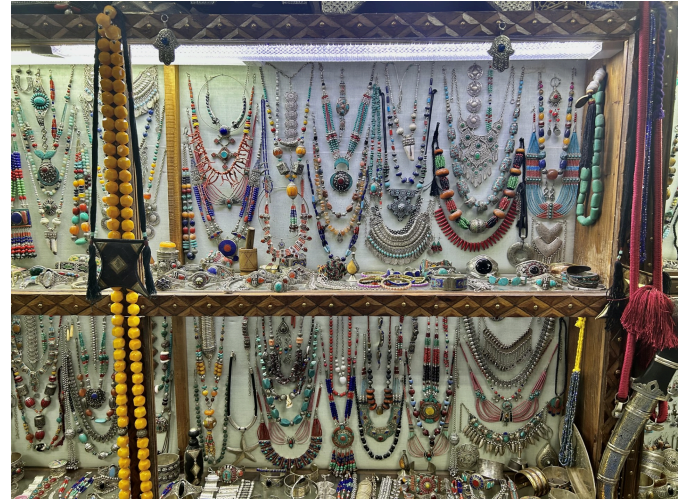
Copper, brass, and silver are popular materials that metalsmiths work with to produce both decorative and functional goods. Popular items Moroccan metalworkers are known to sell are tea sets, jewelry, lanterns, and utensils, which are frequently embellished with etched and ornate patterns. Coppersmithing is one of the most commonly seen trades in bazaars, with artisans applying hammering, soldering, and engraving processes to sculpt and adorn copper into sophisticated designs like bowls, cups, trays, and pots.



Image of leather goods sold in Fes Bazaar, Morocco.

Leatherworking

Leatherworking is a very strenuous and lengthy traditional art in Morocco of crafting a variety of goods such as jackets, purses, shoes, and belts. These items are made from animal skin and hide, often from camels, cows, sheep, or goats through techniques of tanning, dyeing, and tooling.



Images of Tafilalet House Cooperative Rissani, Morocco.

Amazigh Cooperative

A collective known as Tafilalet House joins the labor of 65 families from various native Amazigh tribal groups. This jewelry store in Rissani, Morocco showcases apparel, ceramics, jewelry, and textiles for sale. Purchasing souvenirs from this store is an avenue for supporting the regional economy by participating in revenue systems that disperse valuable funds to families. This cooperative depends on the flow of tourists, which is limited due to the remote location of the store. Located 150 km from the store, in the central Anti-Atlas mountains, Zgouender is an underground silver mine, and the second most important silver mine in Morocco after the Imiter Mine. This mine provides access to silver for nomadic Amazigh families to craft their goods.

Appendix B

Questions

Ighrem City Officials

1. Are there particular challenges or limitations in the current schooling system
2. How do you foresee the current educational system adopting vocational education, that includes a strong focus on microfinance and entrepreneurship?
3. If transitioning the existing educational system in Ighrem to a vocational education model, are there any possible barriers you foresee? If so, how do you intend to address them?
4. How could vocational education address issues of unemployment and economic growth in the rural community of Ighrem?
5. How well do you think this idea will be received by the general public in Ighrem?
6. What is the school enrollment? Is it at Full capacity?
7. Is there space for additional programs? Are the school buildings used in the evenings by members of the community?
8. How many teachers are there? Are they utilized across multiple classes right now? Do they speak multiple languages?
9. What subjects are taught in your education system?
10. What type of transportation is available?
11. What are popular traded goods or known main economic drivers in town?
12. What are the main crops grown, if any?
13. Do you export any goods?
14. What are the most popular goods you import?

15. Is unemployment high?
16. Do children often take jobs?
17. How would you describe the current socioeconomic status of Ighrem?
18. Yusra gave us an overview, but can you briefly state your association, your role within it, and the steps you have taken in Ighrem?
19. What do you envision this school to look like? Who do you want it to help? What products would you like to center it around?

Dahab Souss Almond Cooperative Employee

1. What is the name of the cooperative you work for?
2. Where is this cooperative headquartered?
3. Where is the source of almonds from?
4. What do you believe is the biggest challenge hindering the economic growth of your cooperative?
5. Do you have any formal training in economics or entrepreneurship?
6. Do you feel that your culture would be lost in applying new marketing and/or harvesting techniques for your products? Similarly for technological advancement?
7. What skills or talents would you like to learn if you had the means to?
8. Are you satisfied with your work and income?
9. Would an organized effort to improve your situation be appreciated/desired?

Fundación Paraguaya (Dr. Martín Burt)

- Do you have an implementation plan for your model you can provide to us, and what changes might you recommend given our changed project scope?
- What are some key lessons that must be integrated into an entrepreneurial training program?
- Do you have any resources for “afterschool” entrepreneurial education that would be encompassed in an informal training scenario?
- What learning structure would you recommend for cooperatives given their common governing structure?
- How long should it run? How many days per week? How many lessons?
- Key objectives and takeaways for participants?
- What do you believe it takes to run a successful entrepreneurial program?
- How can the research team utilize the organizations you’ve created (TAM2F, etc)
- If you had to include 5 key lessons for financial literacy in a program, what would they be?
- Do you have an example of a curriculum you used that you can send us?

Fondation Orient-Occident

- What are the most overlooked aspects in terms of the logistics of setting up a school?
- How do you ensure the community you are serving does not become entirely dependent on your aid?
- Can you please talk about the projects you've done before with Martín Burt?

- Theoretically, would FOO be able to provide services similar to the ones you did in Dcheir, especially running water and school transportation?
- What was your process for introducing running water and school transportation to Dcheir? Did you enlist any third-party assets?
- How were more favorable learning conditions for youth created? More resources? Improved curriculum? -What made the environment different
- From your experience, what are the main skills rural cooperatives lack?
- What are a few key lessons or concepts you would include in a program such as this?
- Who do you usually work with within the town on these projects?
- What makes a model for community development transposable and adaptable to other situations and regions of Morocco and beyond?

Dr. Jean-Denis

1. How did you help get women's products marketed?
2. Have there been gender dynamic troubles? What can you recommend for uncovering disparities in cooperatives and marketing for women's production and work?
3. Is there anything we need to be aware of when trying to expand to an international market?
4. Is it more advisable to enter a local or an international market first, or does it differ for each product and location? If it differs, can you give us any insight?
5. What do you believe is the most important strategy for a small business to implement to expand their market

6. What is the most common challenge that you've seen small businesses encounter when trying to expand their business?
7. Do small businesses face any form of discrimination? Especially if they are from native villages?
8. How do you educate small businesses on entrepreneurial skills and the laws and logistics for running a business?
9. What do you recommend if we cannot interview the women themselves?
10. Have there been gender dynamic troubles? What can you recommend for uncovering disparities in cooperatives and marketing for women's production and work?
11. How to acquire new organization resources, and how to pitch to them?

Appendix C

Informed Consent Agreement for Participation in a Research Study

Investigator: Ighrem Sustainable School Research Team (ISSRT)

Contact Information: gr-ighremd24@wpi.edu

Principal Investigator: Michelle Femc-Bagwell mbagwell@wpi.edu

Title of Research Study: Empowering Rural Communities through Sustainable Education: Ighrem School Model

Sponsor: Yousra Doiron, Joseph Doiron

Introduction: You are being asked to participate in a research study. Before you agree, however, you must be fully informed about the purpose of the study, the procedures to be followed, and any benefits, risks, or discomfort that you may experience as a result of your participation. This form presents information about the study so that you may make a fully informed decision regarding your participation.

Purpose of the study: The purpose of this study is to evaluate the feasibility of a sustainable school model that employs alternative learning methods to potentially be implemented in Ighrem. The main topics to be researched are town residents' opinions of the model, which profitable product to use, and which demographic the model will specifically target. We strive to improve access to education in the native Amazigh community, ultimately creating opportunities for skill development, contributing to the longevity of Ighrem's sustainability.

Procedures to be followed:

1. Informed Consent and Introduction to Study

- Provide interviewees with an overview of the study's primary purpose, procedures, risks, benefits, and confidentiality.
- Obtain participants' informed verbal or written consent, ensuring understanding of personal rights, the voluntary nature of involvement, and confidentiality protocols.
- Verbal consent will be recorded

2. Data Collection

- Conduct a needs assessment through interviews with community and organization leaders to gather baseline data on participant demographics.
- Methods and instruments used to collect data include virtual and/or in-person interviews and surveys.

- Interviews will be recorded for use by study investigators and deleted at the end of the study.
- The total duration of the study will be conducted over numerous weeks, but the expected duration of individual participants' involvement in the study is 45 to 60 minutes

3. *Participant Withdrawal*

- In the case of participant withdrawal, the interview will be terminated at the time of withdrawal.
- Should the participant wish for their responses to not be recorded, all recordings of the previously collected data within the session will be deleted. Otherwise, the responses up to the point of withdrawal will be recorded and used.

Risks to study participants: As names and identities will be kept fully confidential, there are no foreseeable risks to participants in this study.

Benefits to research participants and others: There are no direct tangible benefits to participating in this study. However, your efforts will contribute to the development and analysis of the school model which will bring educational and financial development to Ighrem if established.

Record keeping and confidentiality: Meetings will be recorded and transcribed for use by study investigators. After the duration of the project, we will delete any such recordings and documents. Names will not be attached to any responses, however, demographic information such as age, gender, and occupation may be tied to your responses. Direct quotes may be used. Records of your participation in this study will be held confidential so far as permitted by law. However, the study investigators, the sponsor or its designee, and, under certain circumstances, the Worcester Polytechnic Institute Institutional Review Board (WPI IRB) will be able to inspect and have access to confidential data that identify you by name. Any publication or presentation of the data will not identify you.

Compensation or treatment in the event of injury: Because this interview is conducted virtually, compensation or treatment in the event of injury does not need to be considered. You do not give up any of your legal rights by signing this statement.

For more information about this research or about the rights of research participants, or in case of research-related injury, contact:

IRB Manager (Ruth McKeogh, Tel. 508 831- 6699, Email: irb@wpi.edu)

The Human Protection Administrator (Gabriel Johnson, Tel. 508-831-4989, Email: gjohnson@wpi.edu).

Group Members' contact information Email: gr-ighremd24@wpi.edu

Advisors: Mallory Bagwell, Ph.D. mbagwell1@wpi.com

Michele Femc-Bagwell, Ph.D. mbagwell@wpi.edu

Your participation in this research is voluntary. Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit.

By signing below or verbally consenting, you acknowledge that you have been informed about and consent to be a participant in the study described above. Make sure that your questions are answered to your satisfaction before signing. You are entitled to retain a copy of this consent agreement.

Study Participant Signature

Date: _____

Study Participant Name (Please print)

Signature of Person who explained this study

Date: _____

Special Exceptions: Under certain circumstances, an IRB may approve a consent procedure which differs from some of the elements of informed consent set forth above. Before doing so, however, the IRB must make findings regarding the research justification for different procedures (i.e. a waiver of some of the informed consent requirements must be necessary for the

research is to be “practicably carried out.”) The IRB must also find that the research involves “no more than minimal risk to the subjects.” Other requirements are found at 45 C.F.R. §46.116.

Appendix D

Empowering Entrepreneurship

A PATH TO SUSTAINABLE GROWTH

5 Key Focuses

01 FINANCIAL RESPONSIBILITY

- Requesting Loans
- Budgeting Workshops
- Opening Bank Accounts
- Saving and Investment Habits
- Financial Risk Management

02 MARKETING AND BRANDING

- Social Media and Website development
- Graphic Design
- Professional Presentation
- Advertising
- Expanding to International Markets

03 SOFT SKILLS

- Problem solving
- Leadership
- Critical thinking
- Communication
- Teamwork
- Self-reliance

04 ACADEMIC FOUNDATIONS

- Reading and Writing
- English Language
- Arithmetic
- Data Interpretation
- Scientific Inquiry

05 TECHNOLOGICAL SKILLS

- Using Modern Technology
- Microsoft/Google Suites
- Professional Communication
- Online Sales Platforms

4 Building Blocks of Entrepreneurial Empowerment

1

IDENTIFY NEEDS

Performing a needs assessment is a great way to get started. This will allow you to gauge what the community needs and wants

2

COMMUNITY ENGAGEMENT

Any initiative needs to be community driven. Start involving the community early with conversations about priorities. Remember this is about what they want not what you think they need

3

CURRICULUM DEVELOPMENT

Based on the needs of the community, use either a prepared curriculum from a source such as Junior Achievement or develop your own if none exactly match

4

LESSONS AND WORKSHOPS

Work with the community to begin establishing workshops and seminars to cultivate technical and social skills based on the curriculum and desired outcomes

DON'T HESITATE TO REACH OUT TO AN ORGANIZATION

If you feel unprepared to do this on your own, don't worry! There are many organizations that can assist with implementing an entrepreneurial education model. Scan the QR codes provided below for more information on their programs and offered assistance

STEP 1

STRATEGY

STEP 2

INVOLVEMENT

STEP 3

DEVELOPMENT

STEP 4

ACTION PLAN

Suggested Resources

HOW TO GET STARTED!

SCAN THE QR CODES BELOW

Fondacion Paraguaya

Fondation Orient-Occident

Junior Achievement

Future Farmers of America

GNB Bank EcoEntrepreneurs