

Enhancing Food Security with Islamic Microfinance: Insights from Some Recent Experiments

1. Introduction

Agriculture plays a major role in enhancing food security and employment opportunities in several countries with large Muslim population, such as, Indonesia, Pakistan and Sudan.¹ It is a significant contributor to the gross domestic products (GDPs) in these countries. In Indonesia, it accounts for over 15 percent of GDP with around 40 percent of the working population employed in this sector.² In Pakistan, the corresponding figures are 21 percent and 45 percent respectively.³ In Sudan too, it is estimated that the sector contributes 35-40% of the GDP. Yet, there has been a growing incidence of the farming community in these and other countries seeking alternative sources of livelihood triggering concerns about food security. Key factors contributing to this in Indonesia include, inter alia, declining soil fertility, high input prices, limited capital, human resources with low and limited skills, fluctuating crop prices and above all, continuously declining terms of trade (Mintarti, 2008). In Sudan, the problems are further accentuated due to natural calamities in the form of droughts and civil strife. In Pakistan too, the story is similar. Land access is increasingly becoming a key constraint for many farmers forcing them to seek migration to urban areas in search of alternative sources of livelihood. Islamic microfinance initiatives in these countries have targeted the urban as well as the rural poor. Various poverty alleviation initiatives by the Islamic microfinance institutions (IsMFIs) in the rural areas have sought to counter food insecurity and generate livelihoods by focusing on the agricultural and livestock sectors. IsMFIs have used diverse models and tools of Islamic microfinance, as they seek to provide financial and non-financial support to the farming communities. A majority of Islamic microfinance institutions (IsMFIs) focus on provision of micro-credit alone to the farmers, following an approach similar to that of the conventional microfinance institutions. Wadud (2013) for example, argues that policies, which extend microcredit and ensure fair, timely and low-cost delivery of microcredit to marginal and small farmers, could lead to reduction of agricultural farm inefficiency and hence, lead to improvement of performance of farms. This could enhance farm output and welfare, help reduce poverty and improve food security. Of course, the IsMFIs that offer micro-credit must additionally ensure that the credit product(s) offered by them are based on Shariah-compliant modes, such as, *murabaha*, *bai muajjal* and *bai salam*⁴.

Other IsMFIs prefer a more comprehensive and challenging approach. These IsMFIs believe that they must play the role of a pivot in a process of transformation, and in the economic and social empowerment of the farming communities. They prefer to adopt a “project” approach and provide support in a multitude of areas other than finance, such as, technology, production, marketing, business development, capacity building, and thus, ultimately steering the project to success. In this paper, we present a comprehensive analysis of several alternative approaches and composite models of agricultural finance put into practice by IsMFIs using a case study method and draw lessons therefrom. In the following section, we undertake a general discussion of the principles and modes of

¹ Together, these three countries account for over 440 million of the world Muslim population, see The World Fact Book, CIA, accessed from <https://www.cia.gov/library/publications/the-world-factbook/> on October 20, 20014

² Indonesia Country Report, Food and Agriculture Organization (2013)

³ Pakistan Economic Survey, accessed from http://www.finance.gov.pk/survey_1213.html on October 21, 2014

⁴ For a comprehensive discussion on the Shariah-compliant modes of microfinance, see Obaidullah (2008), pages 55-64

Islamic agricultural finance as undertaken in a majority of cases. The following three sections present a few successful composite models of intervention. Section 3 presents a case study of economic and social empowerment of farmers by Dompot Dhuafa Republika, a leading non-government organization in Indonesia. Section 4 presents a case study on an award-winning agri-finance product portfolio by Wasil, a pioneering non-government organization in Pakistan. Section 5 presents case studies of three unique projects of the microfinance unit (IRADA) of the Bank of Khartoum in Sudan. Section 6 summarizes the key lessons and concludes.

2. Islamic Framework for Agricultural Finance

The Islamic framework for agricultural finance seeks compliance with several fundamental Shariah norms. The two most important and relevant norms are: (i) prohibition of *riba* and (ii) prohibition of excessive *gharar*.⁵ The first essentially rules out any financial or non-financial gains for the lender offering credit-based products. The second rules out excessive risk, uncertainty, undue complexity, and conditionality in the financial products. Islamic finance literature identifies several modes for provision of agricultural finance that conform to the above. While some of these modes are sale or lease based and create debt obligations on the part of the farmer, others are sharing-based and create partnerships between the farmer and the financial institution.

2.1. Credit Sale (*Bai Muajjal – Murabaha*)

Bai muajjal is a sale where payment of price is deferred to a future date. Often it includes features of a *murabaha*, which implies a sale on a cost-plus basis. As a micro-credit product, *bai muajjal-murabaha* is the most popular product among Islamic microfinance institutions (IsMFI). The mechanism may be described as follows. Farmer A needs purchase a farm equipment or a livestock X. He approaches the IsMFI. Now, the IsMFI buys X from the vendor/supplier at price P. Next, IsMFI sells X to A at a marked-up price, say P+M, where M is the agreed profit or mark-up taken by IsMFI. The payment of price P+M is deferred to a future date and is made in full or in parts. This Islamic credit product comes very close to the conventional interest-based credit, which perhaps explains its popularity with the IsMFIs. Yet, there is a clear line of distinction between the two. The quantum of debt created under the former is the price of the underlying commodity that is fixed at the time of contracting and that remains at this level even if the maturity of the product is extended subsequently. In conventional credit products, however, the quantum of debt increases, compounded at the interest rate as maturity increases (as in case of loan restructuring).

Bai-istijrar is a variant of the *bai-murabaha* and takes place when the buyer purchases different quantities of a given commodity from a single seller over a period of time. *Istijrar* permits greater flexibility in the matter of fixation of price, which may now be deferred to a future date (and not at the time of contracting as in *bai-murabaha*) and may indeed be based on a normal price or average price in a volatile market. This mode, thus, offers a natural way to reduce price risk. Though ideal for rural finance where farmers often buy their raw materials and inputs in small quantities from the same IsMFI over extended periods, *istijrar* has not been used extensively so far.⁶

⁵ *Riba* and *Gharar* being Arabic terms can only be loosely translated. *Riba* is translated as ‘excess’ or ‘growth’ and generally implies usury. *Gharar* is translated variously as ‘uncertainty’, ‘risk’ and ‘ambiguity’. For a comprehensive definition of *riba* and *gharar*, see Obaidullah (2005), pages 21-35

⁶ For a comprehensive analysis of *istijrar* and its possible applications, see Obaidullah (2005), pages 190-192

Several studies (Obaidullah 2008a, Obaidullah and Shirazi 2014) have documented the case of the Rural Development Scheme (RDS) of the Islami Bank Bangladesh that replicates the Grameen model but uses *bai muajjal* (replacing Grameen interest-bearing loan) as its primary mode of meeting the financing needs of the farmers and the rural poor. The case studies highlight some possible issues of Shariah non-compliance. For instance, in *bai muajjal* finance, one would expect the amount of financing to vary, given that the wide range of commodities being financed, have different prices. RDS on the contrary, provides a uniform financing amount, similar to the basic loan of Grameen. This involves practical impossibilities, since the commodities cannot be deemed as divisible.⁷ Further, *bai muajjal* may not be suitable for financing all kinds of income-generating farming activities, such as, growing vegetables, fishing and other agri-based activities. While *bai muajjal* can be used to finance the purchase of saplings, fertilizer, fishing nets and so on, in practice, the farmers would need funding not just for the physical asset(s) involved, but also to finance the working capital requirement. *Bai muajjal*, thus, provides a partial solution only.

Another issue with RDS use of *bai muajjal* arises out of the *Shariah* requirement of settlement of each of the two sale transactions sequentially in a single *bai muajjal*. In a scenario where farmers need to buy their raw materials and inputs in small quantities repeatedly, meeting the above *Shariah* requirement in *bai muajjal* may involve substantial non-financial costs. As mentioned above, the use of *bai istijrar* in such cases is possible and desirable too, as it can reduce such costs. However, its potential remains largely untapped.

2.2. Leasing (*Ijara*)

Ijara in simple terms implies leasing or hiring of a physical asset. It is also a popular and flexible product in which the IsMFI owns a physical asset (e.g. land, farm equipment) and leases the same to the farmer. The farmer in need of the asset receives the benefits associated with its ownership against payment of predetermined rentals. In *ijara*, the risks associated with ownership of the asset remain with the IsMFI and the asset reverts to the IsMFI at the end of the *ijara* period. *Ijara* is, therefore, similar to conventional operational lease (though there are finer points of distinction including use of penalties and interest in some scenarios). *Ijara* works well in a scenario where the IsMFI is organized as a farmers' cooperative or an organization that primarily serves the farmers. Pure financial intermediaries prefer a lease ending with ownership of the asset by the lessee-farmer. In such an arrangement, the cash flows are structured in a way that cover the cost of the asset and provide for a fair return on the same to the IsMFI. The IsMFI after recovering its cost and fair return may simply donate the asset or sell the asset at a nominal price to the farmer.

2.3. Deferred Delivery (*Bai-Salam*)

Bai-salam is essentially a forward agreement where delivery occurs at a future date in exchange for spot payment of price. Unlike earlier mechanisms of *bai muajjal* and *ijara*, *salam* or *salaf* was originally designed as a pre-cultivation financing mechanism for small farmers. Under a *salam* agreement, a farmer in need of short-term funds sells its output in advance to the IsMFI on a deferred delivery basis. It receives full price of the farm output on the spot that serves its pre-cultivation financing needs. At a

⁷ For example, neither the price of a cow and a goat are same, nor can one buy, say, one and half goats for a pre-determined amount of funding. For a case study of RDS, see Obaidullah (2008a), pages 14-43 and for a more recent version, Obaidullah and Shirazi (2014), pages 88-94

pre-agreed future date, it delivers the output to the IsMFI. The IsMFI then sells the output in the market at the prevailing price. Since the spot price that the IsMFI pays is pegged lower than the expected future price, the transaction should result in a profit for the IsMFI.

Thus, under *salam* the farmers would receive the price of the produce in advance at the beginning of agricultural season against an obligation to deliver a defined quantity of the produce to the buyer after a definite time period in future (after harvest). The sale price received in advance is available to the farmer as a means of financing all farming related needs. Another advantage is that the farmers do not have to sell their produce at a time when the market has an oversupply due to harvest, thus depressing the prices and bringing down the realized income of farmers. While the mechanism provides for much needed financing, it is subject to abuse by unscrupulous intermediaries and traders who seek to take advantage of low bargaining power of the poverty-ridden farmers and execute *salam* at unrealistically low prices. To counter this, mutuality-based models of microfinance have been suggested. Farmers' cooperative organizations can dramatically enhance the bargaining power of farmers and replace intermediaries. In a *salam*-based framework, these cooperatives would provide funds in the form of advance price and would take delivery of the produce after harvest as above. The cooperative would also create appropriate warehousing facilities for storage of the produce and market the same in a manner that avoids depressed prices resulting in increased income for the members. The Jeddah-based Islamic Development Bank may be credited with pioneering this model successfully that involved creating cooperatives (*mudarabas*) of farmers, and placing funds with them for *salam* financing to member farmers as well as providing other non-financial services relating to warehousing, processing, packaging and marketing services in a few of its member countries, such as, Guinea and Palestine.⁸

Another problem with classical *salam* for the financier arises out of its exposure to price risk or market risk. A financier who is not an astute player in the market for the concerned commodity and does not fully understand the economics of pricing in this market may be confronted with adverse prices and consequent losses when it seeks to sell the produce upon delivery by the farmer(s). This problem may be taken care of in several ways. First, a back-to-back *salam* under which the IsMFI enters into a parallel *salam* with a market vendor (say, a miller) and locks a forward price mitigates its price risk. Once the farmer delivers the output to the IsMFI, the same in turn is delivered to the vendor. The difference between the two advance prices is pre-determined profit for the IsMFI. Second, a variant of *bai salam* called value-based *salam* is specifically designed to mitigate price risk. This may be explained with the following example.

In a classical *salam*, the quantity of object of sale (agricultural produce), the price per unit of the object of sale are pre-determined at the time of contracting. If Q amount of paddy is sold on forward basis at price P on *salam* basis, then the financier (buyer) would pay the value of transaction PQ to the farmer (seller) at the time of contracting (before commencement of farming). After a defined and known time period (harvest time), the farmer would deliver Q amount of paddy to the financier. The financier in turn, would find a way to dispose of Q amount of paddy in the market at the prevailing market price P*. If market price increases during the financing period, P* would be higher than P. In other words, P*Q would be higher than PQ and the financier would have positive profits (P*Q-PQ). If however (and this is quite likely given the abundant supply of produce during harvesting season) the prevailing market price is depressed and P* is lower than P, the financier would end up with losses. The value of P*Q-PQ would be negative. This market risk or price risk is mitigated in case of a value-based *salam*. In

⁸ See M.Obaidullah (2014)

the latter type of *salam*, the MFI would pay an amount (say V) to the farmers' cooperative at the time of the contract against an obligation of the farmer to repay in physical quantities of its produce whose value at the time of delivery at a future date (after harvest) is pre-determined (say V^*). In other words, the farmer would deliver V^*/P_1 quantity of paddy to the MFI if the future price at the time of delivery is P_1 and V^*/P_2 quantity of paddy if the future price is P_2 and V^*/P^* quantity of paddy if the future price is P^* . This settlement value (V^*) may indeed be pegged higher than the original value (V) received in advance by the farmer resulting in a known profit (V^*-V) to the financier. While this form of contracting is not well known, Obaidullah (2011) presents a case study involving its application in Sri Lanka. The case study documents the case of Muslim Aid (MA) Sri Lanka seeking to take care of the safety needs of the poor farmers, to build a sustainable source of funds for them as a cooperative organization and to free them from exploitation by trader-middlemen by intervention through the market mechanism. MA also sought to create a win-win situation for the trader-middlemen by forming a partnership with them.⁹

All the modes discussed so far, create debt and may be used by an IsMFI as Shariah-compliant modes of extending micro-credit to farmers. A major problem associated with such modes relates to the possibility of willful default by clients. Unlike conventional microfinance where defaults may result in additional interest payments and/or rescheduling of loan and prepayment may result in rebates, Islamic modes do not admit the possibility of any payment in excess of the original amount of debt. Islamic scholars generally permit the IsMFI to impose a penalty on the defaulting client to act as a deterrent against willful default, but such penalty must be donated to a charity. It cannot be treated as an earned income for the IsMFI as this would tantamount to *riba*.

2.4. Equity (*Mudaraba*, *Musharaka*)

IsMFI may also consider various partnership based modes or equity-based modes for financing poor farmers. Two classical modes commonly discussed in this context are *mudaraba* and *musharaka*. The former involves a combination of entrepreneurship and capital while the latter involves a partnership in entrepreneurship and capital. We also discuss a novel concept of declining *musharaka* leading to complete ownership of asset or project by the farmer. These equity-based products are unique to Islamic rural finance and in some sense, account for its superiority over its conventional counterpart on grounds of ethics and efficiency. Arguably, because of their uniqueness, they are also less commonplace.

A *mudaraba* also known as trustee-partnership is a mode of finance through which the IsMFI provides capital finance for a specific agri-venture initiated by the farmer. The IsMFI, called *rabb-al-mal* is the owner of the capital and the farmer, called *mudarib*, is responsible for the management of the agri-venture. Profit is shared according to a pre-agreed ratio. Losses if any are entirely absorbed by the capital provider – the IsMFI. *Mudaraba* may be of two types – restricted or unrestricted. In a restricted *mudaraba* (*mudaraba al-muqayyada*), the IsMFI may specify a particular business in which investments may be undertaken. *Mudaraba* may also be an unrestricted one (*mudaraba al-mutlaqa*); in which case the *mudarib* may invest the capital provided in any venture (s)he deems fit.

A *musharaka* or a joint venture involves a partnership in which both the IsMFI and the farmer contribute to entrepreneurship and capital. It is an agreement whereby the farmer and the IsMFI agree to combine financial resources to undertake a venture, and agree to manage the same according to

⁹ See Obaidullah (2012), Pages 206-216

the terms of the agreement. Profits are shared between the IsMFI and the farmer in the pre-agreed ratio. Losses are shared strictly in proportion to their respective capital contributions.

A variant of *musharaka* that has traditionally been used in Muslim societies for agriculture is *muzara'a* or output sharing. This mode allows the owners of inputs for agriculture, e.g. land and labor to come together and undertake cultivation. The output post-harvest is shared between the land owner and the laborer (landless farmer) as per a pre-agreed ratio. Another variant known as *musaqa* is a contract between the owner of an orchard and a farmer who can irrigate and look after the orchard. The output of the orchard is shared between the parties as per a pre-agreed ratio.

In the earlier cited project in Palestine supported by the Islamic Development Bank, a composite model is being used to help poor olive farmers. The IsMFI is involved in each step of the olive value chain. First, it facilitates a *muzara'a* agreement between the landowners and the poor farmers. It provides *salam* financing for olive seeds and fertilizers. The olive harvest collected by IsMFI is sold to olive oil mills for a profit. The uniqueness of this model as compared to conventional model is as follows. In the event of loss due to crop failure: (i) the landowners would lose potential income under profit-sharing; (ii) the farmers would have to pay back (cash or in kind) to the IsMFI no more than the advance payment and (iii) the IsMFI would lose potential profit from sale of olives to oil mills. Under the conventional model however, a different set of outcomes would be in place in case of crop failure. The farmers would have to pay a) rentals due to landowners; b) principal loan due to MFI; and c) interest due to MFI. In short the poor farmers would have to bear the entire downside risk with agriculture.

Another variant of *musharaka* called diminishing *musharaka* has great potential for the IsMFI as a financing product. While a classical *musharaka* aims to involve the IsMFI as a permanent partner in the venture, in a declining *musharaka*, the IsMFI's share in the equity is diminished each year through partial return of capital. The IsMFI receives periodic profits based on its reduced equity share that remains invested during the period. The share of the farmer in the capital steadily increases over time, ultimately resulting in complete ownership of the venture.

Agency problem with partnership-based modes in Islamic finance is cited as the key reason behind preference of mainstream Islamic FIs for debt-based products. They become particularly acute in rural settings. Other problems that are usually cited with partnership-based modes as compared to sale and lease based modes are as follows: One, partnership-based mechanisms require long-term involvement by the microfinance institutions in the form of technical/ business assistance, which raises the cost of implementation. Two, the uncertainty about profits is a major drawback of such modes. Although microfinance programs have information on local market behavior, weekly profits fluctuate. Fluctuating profits make it extremely difficult for institutions to predict their cash flows. Farmers can make the job doubly difficult by not keeping accurate accounts. Three, the partnership-based modes are difficult to understand for IsMFI officers and borrowers alike. Even in the hypothetical situation that profits were known, the borrower has to repay a different amount each period (and the officer has to collect a different amount each period). This lack of simplicity relative to equal repayment installments is a source of confusion for borrower-farmers and IsMFI officials. Unlike profit-sharing mechanisms, *bai muajjal* does not require the farmer to maintain written records that are often unavailable at the rural enterprise level or if available, the farmer may be unwilling to share them.

While IsMFIs may use some or all of the above for-profit modes in the interest of sustainability, their mission driven approach of helping the rural poor requires provision of a mix of financial and non-financial services that include handholding and other forms of support to farmers. The overall

objective is benevolence-driven and often strictly not-for-profit. Indeed, Islamic economics and finance provide a range of benevolence-driven, philanthropy-based and not-for-profit mechanisms as well, whose importance can be hardly overemphasized, especially when seeking to address the financing needs of the poor farmers.

2.5. Qard al-Hasan

Qard hasan literally means a beautiful loan. It is a loan granted by the lender without expectation of any return on the principal. Islam provides very strong incentives for lenders to meet the financial requirements of the needy by providing loans without expecting any gain in return from them. Any such return expected or demanded by the lender is forbidden *riba*. It is pertinent to note several things here. First, the lender is permitted to recover the actual cost it incurs in the process from the beneficiary or the borrower. However, the amount charged to borrower must not be more than the actual cost of operation. Thus charging the borrower based on notional or estimated cost of operation is ruled out. Two, Islam exhorts a borrower to be generous when (s)he repays. (S)he is allowed and indeed, encouraged to return more than (s)he originally borrowed from the lender. The excess is viewed as a gift (*heba*) from the borrower and is permissible as long as it is not demanded (stipulated in the contract) by the lender. A Muslim is also encouraged to avoid debt. (S)he should strive to get out of debt if (s)he is already trapped in it. (S)he must make all efforts to repay the loan as early as possible. At the same time, Islam encourages a lender to give extension in time or waive part of the loan, should the borrower be forced to default. It completely rules out any penalty for default that is unintentional. However, in case of willful default or delinquencies, a penalty may be imposed as a deterrent. Such penalty, once collected, must be donated to charity and cannot form part of the income of the lender. At an institutional level, one finds that this mode forms the basis of over 6000 Qard al-Hasan Funds (QHF) dotted across Iran, which provide microfinance primarily to the rural poor.¹⁰ The QHF raise funds using the qard al-hasan mode from their depositors; and lend onwards also using the same mode. Another interesting application of this mode on the lending side only (funds are raised through charity) is the Akhuwat model in Pakistan.¹¹

2.6. Sadaqa, Zakat and Waqf

The broad term for charity and philanthropy in Islam is *sadaqa*. *Sadaqa* is in the nature of free donation without any strings attached. When compulsorily mandated on an eligible Muslim, *sadaqa* is called *zakat*. When *sadaqa* results in flow of benefits that are expected to be stable and permanent (such as, through endowment of a physical property), it is called *sadaqa jariya* or *waqf*.

Zakat is an institution of philanthropy mandated by faith. It may also be seen as a compulsory levy on every believing and practicing high-net-worth Muslim. From a macroeconomic perspective, *zakat* is a source of recurring annual flow of funds. Since Islamic law restricts the allocation of *zakat* funds to eligible beneficiaries alone, that primarily include the poor and the needy, *zakat* is potentially a major tool of poverty alleviation. It is more in the nature of a safety net to take care of the basic necessities of life of poor farmers who cannot afford them. Additionally, *zakat* funds can be used in a variety of ways for the farmers; for skill enhancement, provision of start-up capital, pay off the debt of the over-indebted farmers as long as the beneficiaries suffer from abject poverty.

¹⁰ For a discussion of the Iranian Qard al-Hasan Funds, see Obaidullah (2008), pages 37-38

¹¹ For a case study of Akhuwat see Obaidullah and Shirazi (2014), pages 81-88

Waqf, which essentially implies the irreversible endowment of an asset of value (e.g. real estate, cash) by a donor with a stipulation that the returns generated through investment of the asset or the benefits flowing out of the asset are used for specified purposes. Thus *waqf*, by definition, provides for a sustainable source of funds/ benefits that may be targeted at the poor farmers.

To sum up, Islamic finance provides a fairly broad range of modes and mechanisms that may be used for provision of financial and non-financial services and support to the poor farmers. Often some or all of these charity-based, not-for-profit and for-profit mechanisms are combined in models to provide holistic solutions to the problems of the poor farmers, alleviate their poverty and help them enhance food security. In the next three sections, we discuss some composite models of intervention that are recent and deemed highly successful by observers.

3. Farmers' Empowerment Program (Indonesia)

Dompot Dhuafa Republika (DDR) is a pioneer in using Islamic philanthropic funds, such as, *zakat*, *sadaqa*, and cash *waqf* for alleviating poverty. The program for economic and social empowerment of farmers by this leading non-government organization¹² in Indonesia seeks to provide a solution to the multiple problems of limited land, declining soil fertility, high input prices, limited capital, low and limited farming skills, unremunerative and fluctuating crop prices. It has embarked on an organic farmers' empowerment program called *Pemberdayaan Pertanian Sehat (P3S)* that adopts a holistic approach involving adjustment of cropping patterns and change in farmers' attitude and preferences from conventional farming to a semi-organic cultivation system. The intervention involves gradual and continuous assistance, guidance and introduction to production facilities that are safe, locally made and affordable, to biotech and low-chemicals system through integrated and environment-friendly farming. The semi-organic cultivation system reduces farmers' permanent dependency on seeds, fertilizers, pesticides and chemical agricultural facilities and inputs that are expensive. With the user-friendly green agricultural technology, farmers can reduce production costs while obtaining higher prices for the organic produce.

The organic farmers empowerment program (P3S) involves provision of farmland on *ijara* (lease) and of capital for semi-organic farming with a view to bringing about significant increase in farmers' earnings. The empowerment process also involves strengthening of farmers' capacity as human resources and helping them get organized as formal communities, called combined farmers groups (*gapoktan*). The intervention ends when the combined farmers groups have developed the capacity to manage the formal organization independently, putting in place partnerships with other stakeholders to support the organization's existence, and improved their bargaining position in the market.

Farmers' eligibility for P3S program is based on several criteria, e.g. income and ownership, business potential, and the farmers' potential as human resources. The main target group are poor farmers meeting the following criteria. One, the farmers' family head earns less than or equal to two USD per day in rural areas, or less than or equal to three USD per day in sub urban areas. Two, the condition of their house (either owned/rented) must be below acceptable level with limited equipment in their ownership. Approval from local neighborhood based on the above criteria is needed to confirm a poor family's eligibility for the program. The business potential criteria are 1) development potential, which reflects the ability to expand the business in scale and scope, related to the raw materials availability,

¹² For a comprehensive report on the programs of DDR, see Obaidullah et al (2014), pages 66-69 and Alim (2014)

production capacity, market potency and employment rate, 2) potential to create derivative businesses that allows more employments and economic benefits for other beneficiaries, and 3) potential for local resources utilization. Besides the above, a farmer must: 1) be of minimum productive age of 18 years or is married, with maximum age of 60 years, 2) has the vision for developing business, 3) able to work, 4) is not enlisted as participant of any other similar program.

3. 1 Components of the Program¹³

The empowerment program is undertaken in several stages: 1) promote awareness or recognition of potential and the environment; 2) build comprehension that organization in the center-stage of this process must be started with the community's initiative through continuous strengthening of the organization; 3) prepare a cadre of local farmers who would take over the task of mentoring after the program ends; 4) provide technical support, associated to the technical aspects of the production process, which includes the introduction and implementation of organic farming technology and semi-organic farming, adaptation of technology, development of pre-and post-harvest processes as well as access to information; 5) manage system in order to facilitate farmers in fulfilling their needs, both individually and in groups, in a sustainable livelihood system, by bringing together the interests of stakeholders, and the bargaining position of farmers through farmers institution and market structure.

The process of forming farmers' organization involves the following stages. First, individual farmers in 8-10 numbers form Farmers' Groups. Next, several Farmers' Groups are organized into a secondary group called a Combined Farmers Group or Gapoktan. Finally, several Gapoktans are combined to form the Farmers' Cooperative.

Since a major problem for farmers is the lack of land ownership, one of the components of the P3S program is the provision of leased land to farmers. Once farmers groups are formed, the next stage is the leasing of land to each farmer at an average land area of 25000 m² for each farmer or 2.5 hectares (6 acres) for each group. Farmers get lease land for one year with the rental fee of Rp. 4.000.000 (USD150) per hectare per annum. In addition to the land lease package, farmers also receive a package in the form of processing costs of land, direct costs of labor for one growing season. Farmers are expected to use the organic agricultural inputs (saprotan) and working capital funds of the enterprise. Labor fees are directly paid for the overall processes of land production and harvest. Assistance is also provided in the form of fertilizer, compost, plant pesticides, seeds etc. The program through research has developed its own organic agricultural input (saprotan) in the form of bio pesticide that is local-based, affordable, and environment friendly.

A major component of the empowerment program is institutional capacity building. Assistance for the strengthening of the institutional groups of farmers and farmer groups (gapoktan) involves the following. Enhancing the capacity of farmers is done through various forms of training in semi-organic agriculture as also in organizational management and financial management for the management of farm groups and gapoktan administrators, establishment of the gapoktan forum, as well as periodic monitoring and linking up to other stakeholders and the market. For instance, during the process of cultivation of rice, the tutoring process, both regular and irregular meetings, is done through visits to the homes of the farmers. Tutoring is done through regular meetings of the Group once a week. The process of transfer of appropriate technology and organic rice cultivation is delivered through group

¹³ For further details on this program, see Nana Mintarti (2013) and Alim (2014)

meetings. An example of the move towards self-sufficiency is a consensus made among farmers that each farmer must save up to forty percent of their harvest, which would initially be used to pay land lease for the following year.

3.2. Zakat-Funded Programs

The organic farmers empowerment program (P3S) along with other economic empowerment programs of DDR is funded with zakat. The funds dedicated to such programs average about IDR 6.3 billion per year over the five-year period (2008-12) that hovers around 10 percent of total zakat resources available (see table 1 below). The low dedication is attributable to apparent *Shariah* objections by some scholars who emphasize on utilization of *zakat* for consumption alone in the short-term. In the face of a growing realization however that an emphasis on short-term may lead to a dependency syndrome among the poor, and that the long term need of the poor is economic and social self-reliance, DDR seeks to enhance the utilization of *zakat* for community empowerment programs.

Among the major economic programs of DDR are: the masyarakat mandiri (self-reliant communities), pertanian sehat (health/ organic farming), kampoeng ternak nusantara (livestock development), Islamic microfinance (for-profit) in addition to capacity building initiatives under Indonesia Magnificence Zakat (IMZ). The economic empowerment programs follow a similar model that involves interest-free loan financing to groups from a pool created out of *zakat* funds. The key distinguishing factor of this model is the phased building of self-reliant communities and the creation of a community organization that would continue to provide financing to the members.

Table 1. Five-year Details on Economic Empowerment Programs by DDR

No.	Field Program	Program	Funds (Rp Billion)	Beneficiaries
1.	Organic Farming	15	4.6	2611
2.	Livestock	9	6	997
3.	Fisheries	52	11.1	6175
4.	For-profit Microfinance	6	4.3	2186
5.	Research, In House & Public Training	150	5.6	5164*
	TOTAL	232	31.7	17133

The program has a clear termination and exit strategy. It withdraws from the region and the program ends as soon as the community cadres are ready to take part in maintaining program sustainability - financial and institutional. It ensures that a community-based organization is a legal entity with adequate capacity to sustain cooperation with all stakeholders. From a *Shariah* perspective, this ensures that the “*tamleek*” condition of *zakat* is complied with, since the poor beneficiaries ultimately become the owners of the local organization in a collective sense with transfer of assets from the program to the local organization. Thus, the fact that they are borrowers in the first instance does not appear to vitiate the “*tamleek*” requirement.¹⁴

¹⁴ The Arabic term “*tamleek*” translates into “imparting ownership”, which is an essential condition for *zakat* distribution to any beneficiary. For more on this issue, see Obaidullah (2012) pages 60-61

4. Credit and Lease-Based Finance (Pakistan)

According to a survey by a group of researchers from Lahore University of Agriculture¹⁵, there are about 5.1 million farms in Pakistan. Of this, 93 per cent are small and marginal accounting for 60 per cent of the total cultivated area. They also found that about 70 percent of farmers participate in the credit market; a majority from intermediaries charging exorbitant interest rates. Further, the farmers also believe that they can save up to 25 percent in costs if they purchase inputs on cash. In addition, given that farmers usually return the money after the sale of the crop, the study argues that banks should participate in agricultural sector using *bai salam* as the mode of finance. A similar reasoning seems to underlie the design and development of *salam* as an agri-finance product by Wasil Foundation, a leading Islamic microfinance provider in Pakistan.

Wasil Foundation, formerly known as Centre for Women Co-Operative Development (CWCD), is a not-for-profit company established in 1992. The aim of the organization is to economically empower poor communities and assist them in developing their businesses through micro credit and enterprise development programs. In 2009, Wasil Foundation (formerly CWCD) extended its operations from conventional microfinance to Islamic microfinance. Eventually, it discontinued conventional microfinance in 2010, thus becoming a purely Islamic microfinance organization. Wasil Foundation has thus become the pioneer organization in Islamic microfinance operations in Pakistan. It believes that in Islam there is customized financial product for each section of the society and has accordingly, designed a range of products in its portfolio (see table 2 below).

Table 2: Islamic Finance Products by Wasil

Mode	Target Beneficiary
<i>Zakat</i>	Destitute unable to work
<i>Qard al-Hasan</i>	Poorest of the poor with ability to work
<i>Murabaha</i>	Micro level traders street hawker Small shopkeepers
<i>Salam</i>	Small Farmers up to 5 acre land holding
<i>Ijara</i>	Farmers without land holding (Rental Land)
Diminishing <i>Musharaka</i>	Micro entrepreneur in need of assets
Master <i>Salam (Ijara + Salam)</i>	Developed by CWCD farmers in need of land plus money for cultivation

Thus, Wasil has three products specifically targeted at the farming community. It believes that farmers in Pakistan are traditionally skilled but lack capital. Its first product based on *bai salam* is targeted at small farmers with up to 5 acre land holding, who need money to grow their crops and to feed their families up to the time of harvest. Under the *salam* agreement, Wasil makes payment of agreed price in advance to the farmer against commitment to deliver agreed quantity of produce upon harvest. It involves lower cost as compared to other alternatives and finance is provided against a collateral in the shape of guarantee from community members or a charge on available assets with the farmer, e.g. livestock. Wasil's second product seeks to address the issue of lack of land ownership among farmers through leasing. Wasil takes agriculture land on *ijara* from the owners of the land in bulk and sub-leases the same to farmers for agreed period in exchange of pre-determined monthly lease rentals. While the lease rental is paid in cash in case of fruits/vegetable/flower farms, the same is paid in the form of crops in the case of wheat and rice.

¹⁵ See Kaleem et al, (2009) pages 275 - 292

Wasil's third product combines the concepts of *ijara* and *salam* and bases the whole return on the principles of *salam*, which requires settlement of debt in terms of the crops or produce. Under this agreement called Master *salam*, the farmer gets land on rental as well as cash to grow the crop and agrees to deliver a given quantity of the crop to Wasil. A part of the repayment in terms of crop is towards rentals on *ijara* while another part relates to *salam*. After the first cycle of finance, there are two subsequent cycles of financing that are based on *salam* alone. After the two additional *salam* cycles, the contract ends.

4.1. Risk Factors and their Mitigation

The main challenge concerning the *salam* transaction is the identification of the quality of the crop and the determination of the price at which it must be procured. The Government of Pakistan issues a support price for wheat at which the Food Department of Government of Pakistan procures it. However, when Wasil Foundation approached these departments for the sale of crop, they refused due to the restriction levied upon them by the Government of Pakistan whereby only a farmer may sell to these departments. Thus, the only other options were the sale to the flourmills or to the open market. Furthermore, unlike the support price at which the Government Departments purchase the crop, the flourmills and the open market rates are determined by certain market factors including the quantity of national produce etc.

In order to determine the price, Wasil Foundation takes the data of the sale price in a specific area over the last 03 years. This gives a rough estimate of what the price is likely to be for the crop that is to be grown. Wasil Foundation then offers a float rate at which the purchase price is negotiated with the farmer/client. This negotiation takes place at the village level with groups of farmers who are likely to sell the crop to Wasil Foundation. At the end of this negotiation, Wasil foundation determines a final price at which it procures the crop. At times, this price may vary from area to area based on the cost of production, the expected yield, the sale price of the area in the last years and the amount of risk that the organization has to face.

In June of 2010, Wasil Foundation launched its first rice *salam* transaction. Unlike wheat, the market rate of rice crop is entirely dependent on the quality of the crop wherein the seed of the crop is of major importance. While in the case of wheat, the seed being planted does not directly affect the price, as the output crop is the same, rice crops are categorized in accordance to the seed that is being planted by the farmer. Thus, the challenge of the quality of the crop and the proper identification of the seed is of vital importance while conducting a *salam* transaction on rice. For this, Wasil Foundation trained its procurement and sales department, through the agriculture department of Government of Punjab, Pakistan, on the types of rice and the identification techniques of rice.

Unlike wheat, there is no support price by the Government for rice, which makes the estimation of the purchase price more complex for rice. The options open for Wasil Foundation are again, as in the case of wheat, the selling of the crop to the open market or the rice mills in the area. However, unlike wheat, when rice is harvested, it contains a high moisture content due to which the total weight of rice is increased by approximately 15 to 20 percent. This moisture further induces a chance for the crop to be damaged if it is not dried up in time. These issues increase the risk of holding rice at a warehouse for collection and sales purposes. Thus, unlike wheat, which may be stored for up to 03 months by Wasil Foundation, rice is to be sold within a maximum of 01-month period due to the unavailability of the

proper infrastructure to store rice. This challenge still exists while conducting a rice transaction of *salam*.

The crux of the Master-*salam* product is the repayment in the form of crop rather than cash. This makes enormous sense, given that the client/farmer is not rich in cash during his crop cycles, which makes it difficult for the farmer to make the monthly repayment in cash. However, the farmer/client is rich in crop at the time of harvesting. Therefore, the product is focused on the principles of *salam* wherein the crop is delivered as a repayment for cash inputs, plus for the extra input of land in the form of *ijara*.

5. Composite Partnerships with Farmers (Sudan)

A model that has been experimented in Sudan in the recent past, adopts a composite finance-plus approach to support the farming communities. While there are elements of credit-based financing, the overall models are rooted in partnership. The underlying rationale for this approach seems to be the pivotal role that the Islamic financial institutions see for themselves in addressing various problems of the poor farmers and in enhancing food security of the region. While agriculture in Sudan faces problems similar to those in Indonesia and Pakistan, the challenges here are even greater arising out of adverse weather conditions, large tracts of drought-affected land and civil strife leading to a faltering economy riddled with unemployment. Islamic microfinance in Sudan, however, has a lot to offer in terms of its uniqueness and high success rate.

The IRADA microfinance program of Bank of Khartoum is experimenting with new and innovative models of intervention to make a dent on chronic social problems, such as, poverty and unemployment. As part of the Sudanese economic system, it operates as a Shariah compliant bank. At the same time, it uses participatory modes within a model that is rooted in cooperation to create and share wealth in the agriculture sector.¹⁶

Bank of Khartoum (BoK) was established in 2002 while its Microfinance Department (IRADA) was established in 2009 with the support and assistance from the Islamic Development Bank. The department was given the trust to implement the SDG 200 million Al-Aman fund for Microfinance. The fund was formed by a strategic partnership between the Diwan Zakah (apex body of *zakat* management in Sudan) and 32 Sudanese Commercial Banks.

IRADA was set up with a vision “to alleviate poverty and hunger by realizing the potential of the poor through development of limited resources and affordable financial facilities”, and a mission “to increase the numbers of poor people involved in entrepreneurial activities through Islamic finance and expanding income generating activities, creating sustainable livelihood and employment. Its programs and activities are influenced by its strategic approach theme, which states, “Today the poor are our clients, but tomorrow they will be our business partners.” Since inception, IRADA identified and focused on “economic empowerment through group finance and partnership” as its methodology of intervention.

Innovative Use of Zakat

¹⁶ Not surprisingly therefore, it was adjudged to be among the top three participants (Wasil receiving the top award) at the Global Islamic Microfinance Challenge 2014 organized by the CGAP (Consultative Group to Assist the Poor), the Islamic Development Bank, Al Baraka Banking Group, and Triple Jump, which evaluated innovative Islamic microfinance experiments with a focus on product development.

In perhaps the first documented example of utilization of *zakat* for *gharimeen* (indebted) in an organized manner, globally speaking, a security portfolio was created through a partnership between the Diwan Zakah (apex body for *zakat* management in Sudan) and commercial banks. The portfolio has a capital of 200 million pounds with 25 percent contributed by the former and the balance by the banks. The portfolio provides an insurance to the program against genuine defaults by clients at the second level. At the first level, the default is covered by individual personal guarantor(s) brought in by the client. The portfolio covers all productive sectors (commercial, agricultural and vocational) across Sudan.

Business Development Services

IRADA has carefully developed a network of providers of business development services on its payroll to provide a range of additional services to its clients. In many ways, these officers are key to the overall success of the program with their ability to source and procure the assets needed for the income-generating microenterprises and their role in monitoring the clients. In fact, each client is assigned a business development officer who would be responsible for ensuring that the relevant asset is delivered to client, that the supplier is paid and that the client makes timely repayment to the bank. The business development officers are also entrusted with the task of advising the clients on how their business can be more profitable. They also use their network in order to facilitate mutual exchange among their clients. The provision of business development service is adequately incentivized.

5.1. Abu-Halima Greenhouses Project

The Abu-Halima Greenhouses Project of IRADA, designed in 2011, uses a composite model of intervention that combines several “smart” factors and is designed to address several critical social issues including lack of food security, unemployment and poverty. It aims to open new economic opportunities for young university graduates with formal education in agriculture. The project in its current phase, targets economic empowerment of 125 educated unemployed graduates and their families. The project involves setting up 25 productive units of greenhouses with annual capacity production of 1200 tons of off-season vegetables using latest technology in the industry and professional expertise using the partnership-based mode.

The business plan of the project is rooted in the economic peculiarities of the local market for vegetables, which witnesses a major spurt in the vegetable prices because of adverse weather conditions. The setting up of greenhouses would enable the micro-entrepreneurs to grow high-value vegetables all through the year generating income for them, while smoothing the supply of vegetables (hot Charleston pepper, sweet Charleston pepper, tomato, cucumber, yellow pepper, red pepper) in the Khartoum market. The greenhouses can now grow tomatoes that usually witnessed a many-fold price rise during summer and other high-value vegetables during winter.

The Model (Restricted Mudaraba Partnership)

Unlike the regular micro-credit products, or even the commercial *mudaraba* products, the partnership between the bank and the micro-entrepreneurs extends well beyond that between a creditor and debtor or that between a *rabb-al-maal* (fund provider) and *mudarib* (fund manager). The bank assumes responsibility for provision of financial as well as a range of non-financial services to the micro-

entrepreneur in the form of technical, marketing and business development services. The latter involves direct investment in creation of assets for supply of electricity, water as well as for vegetable cooling, storage and other services.

A beneficiary of this project must come from low-income strata of the Sudanese society and the income of the household should not exceed two times the minimum wage of USD 207 per month according to the law of Central Bank of Sudan. The beneficiaries are organized into jointly liable groups of households (headed by graduates, preferably in agriculture) in the form of a cooperative society registered according to the Sudanese Cooperative Law. These groups enter into the restricted *mudaraba* partnership contract with BoK. The micro-entrepreneurs receive the required technical training from experts, managerial and marketing support from the bank. They are eventually organized into a co-operative, which allows them to benefit from common facilities while retaining their right to do business activities.

Other stakeholders and partners in the project include: (i) Ministry of Finance, which has made a social contribution of 6.5 percent of capital (ii) the State Ministry of Agriculture, which helps get fertilizers and assists in technical capacity building; (ii) the Ministry of Social Affairs, which nominates the beneficiaries through its Graduate Fund; and (iii) Sanaa food hypermart and home centre - a major Supermarket Chain - which has committed to off-take the vegetables. A technical Turkish firm, specializing in the technical aspects of greenhouse projects is a significant contributor to the success of the project.

Financing Method

The financing product is structured using the *mudaraba* mode with profit and loss features. Losses would be absorbed by the bank while profits would be shared in the ratio of 40 percent for the micro-entrepreneur and 60 percent for the bank. Profit distribution would take place twice in a year. The “restricted” *mudaraba* involves total financing to the tune of SDG 15 million (USD 4.50 million), which accounts for about 6 percent of the total portfolio of IRADA. It involves financing of working capital to purchase the 25 greenhouses, supporting infrastructure, technical feasibility, technical capacity building, agricultural inputs and living allowances. As stated above, the Ministry of Finance has contributed 6.5% of *mudaraba* capital as a social contribution with a view to lower the costs borne by the beneficiaries.

IRADA’s product package includes the services of an administrative coordinator, and an agricultural expert to supervise the production process and technical matters, ensure quality control and provide training. Such costs are included with the direct cost of the product. IRADA would retain control of the venture for 5 years, essentially to ensure its profitable operation. During this implementation period of 5 years, the graduate micro-entrepreneurs would be trained to manage the ventures. IRADA would cede control of the project assets to the Cooperative as a gift or sale at a nominal price after 5 years. Depreciation of assets is calculated at 20 percent per year over 5 years. The only collateral that the bank would be seeking for this financing is a personal guarantee against mismanagement and lack of commitment. There are no financial or physical collaterals required. However, the households, through the cooperative society, are required to submit a blank bank check (without definite amount) as a security for default and infringement. The title of the assets is in the name of BoK as the *rab-al-mal* during the finance term, thereby, mitigating the asset-related risks. BoK, being the provider of the funds (*rab al mal*), has an insurance contract with the Islamic Insurance Company to cover the assets against any loss.

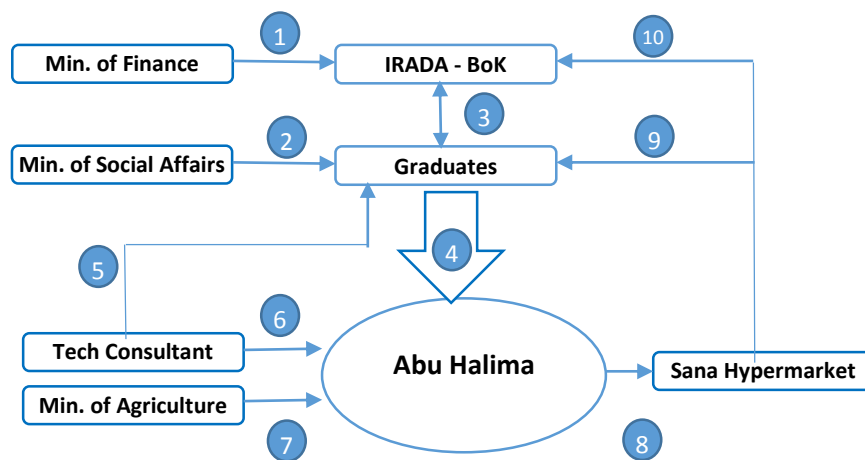
The returns on investment to IRADA would come in the form of 60 percent of profits made on the sale of 1200 ton of high value vegetables and fruits annually. This is expected to generate an ROA of 18 percent and IRR of 22 percent for the bank. Returns to the micro entrepreneurs would come in the form of balance profit share, estimated at SDG 2100 per family plus an additional living allowance of SDG 300 to 600 per family during the implementation period. The returns are expected to significantly increase to SDG 7000 per family, since IRADA would withdraw after this period and the micro entrepreneur would receive full profit share.

A unique feature of the design of this microfinance model is the provision for living allowances during the implementation period of 5 years. This makes enormous sense as the *mudaraba* profits may display volatility while the basic needs of the micro entrepreneurs must be taken care of on a priority basis.

Non-financing services

Another unique feature is the magnitude and variety in the provision of a multitude of non-financing intervention/ services to the micro entrepreneurs. These may be listed as under: (i) assistance to source and hire technical firm to construct greenhouses and related infrastructure and to provide technical support throughout project lifetime; (ii) pre-production support in the form of seeds, fertilizers, pesticides, machineries, electric and water sources; (ii) at-production support in the form of living expenses allowance, operational expenses, harvest expenses, technical support; (iii) after-production support in the form of cooling storage and grading room; (iv) assistance to source large customers such as DAL and Home Centre to purchase produce; (v) assistance to manage the project accounts; (vi) formation and registration of Cooperative of farmers; and (vii) transfer of ownership to the Cooperative upon its readiness to manage the business.

Chart 1: The Abu Halima Project



Arrows denote specific activities as follows:

1. Financial partnership between Ministry of Finance and BoK
2. Nomination of agriculture graduates for the project by Ministry of Social Affairs
3. *Mudaraba* agreement between IRADA (BoK) and the micro entrepreneurs (agriculture graduates)
4. Setting up of Abu Halima greenhouses
5. Technical consultancy to micro entrepreneurs

6. Technical consultancy to greenhouse establishment and operation
7. Provision of fertilizers and other services by Ministry of Agriculture
8. Sale of vegetables output to Sana Hypermarket and others
9. Sharing of profits (40% for 5 years and 100% after that) by micro entrepreneurs
10. Sharing of profits (60%) by IRADA-BoK for 5 years

Risk Management

An agri-venture like Abu Halima faces several risk factors, many of whom may lead to crop failure and consequently to failure of the project. The success of the project hinges on mitigating these risks to acceptable minimum. Below we list down some major risk factors identified by BoK and the various measures contemplated to address them.

- Inability to sell produce: Contractual agreement with major customer(s) is in place to purchase products at market price.
- Crop failure due to disease: Program has provided the micro entrepreneurs with fertilizers and ensured that they have the capacity to use appropriate amounts.
- Crop failure due to heat: Greenhouses have automatic temperature control.
- Crop failure due to lack of humidity: Greenhouses have automatic humidity control.
- Crop failure due to lack of water: Drip Irrigation system is developed to provide water. Well is constructed to provide sufficient water.
- Electricity blackouts: Program has provided generators that run on diesel to function as backup electricity.
- Unmet consumption needs leading to a lack of commitment: Families are provided SDG 300 to SDG 600 as living allowance every month all through the five-year implementation period.
- Lack of commitment by beneficiaries: BoK has retained an option to remove a given beneficiary and replace them with another. Beneficiaries have to sign into work and their performance is monitored. Bank has the prerogative to distribute a larger proportion of profits based on performance and commitment.
- Conflict during distribution of profits due to different yields- Profits of the micro entrepreneurs and bank is based on the total production of all the greenhouses and not on an individual greenhouse basis.

Challenges

Notwithstanding the apparent success of the model, several challenges remain. We summarize them briefly below. The first set of challenges relate to the beneficiaries. First and foremost, the project assumes that the beneficiaries come with the qualities and characteristics of a micro-entrepreneur, especially when it relates to the agriculture sector. This is a strong assumption. Many of the beneficiary-entrepreneurs may turn out to be deficient in terms of their abilities, notwithstanding the training and capacity building inputs provided to them. Behavioral traits, such as, indolence, apathy, negligence, impatience are hard to get rid of. To get over their deficiencies, several farming tasks are outsourced and the cost is charged to the beneficiaries according to *mudaraba* rules. Further, lack of financial acumen on the part of the beneficiaries is likely to come in the way of having a proper understanding of the *mudaraba* contract and its implications in terms of rights and obligations of the parties. The second set of challenges are institutional. Compared to traditional banking and microfinance products, micro-*mudaraba* is a new financing methodology that requires developing much of the procedures and mechanisms de novo. At the same time, these are like to be more complex, especially when these involve multitude partners. The third set of challenges come from a lack of an enabling environment, such as, weak *mudaraba* laws. A major challenge may be in the nature

of political interventions that send a wrong signal about the nature of product being non-commercial. Macro-economic developments, such as, high inflation rates may also play havoc with financial estimates.

5.2. Wad-Balal Livestock Development

Livestock production is an important component of the local economy in Sudan, providing food, employment, foreign exchange earnings, a source of wealth, and supply of inputs and services, such as draught power, manure and transport. The livestock subsector however, faces numerous constraints, including a heavy disease burden, low productivity exacerbated by drought and insecurity, the lack of adequate marketing infrastructure, and poorly organized and informed livestock owners and traders. The Wad Balal cattle fattening project of IRADA involving an investment of SDG 9.30 million (about USD 1.68 million) aims to make a dent of poverty by addressing many of the above problems. The project aims to produce 7,000 cattle annually meeting export standards, link the poor livestock herders with international markets utilizing contacts of the Sudanese diaspora and increase incomes of an estimated 250 to 300 poor families.

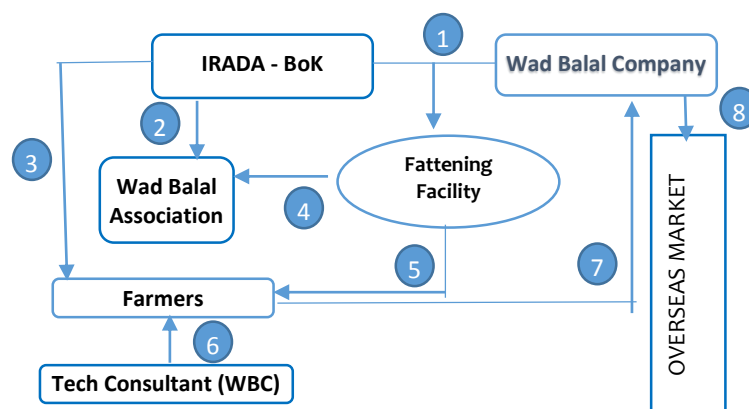
The Model

The model of intervention involves three parties – IRADA of BoK; the Wad Balal Company owned by a group of Sudanese diaspora in the GCC; and the Wad Balal Association with cattle farmers as members. Under the arrangement, IRADA will have a diminishing *musharaka* agreement with the Wad Balal Company to invest in the required physical assets and create a facility for fattening of the calves. The Company will provide the technical services for the project. The *Musharaka* will provide the facility/assets on *ijara* or lease to the Association comprising the farmers. IRADA and the Company will share the lease rentals from the farmers, as received by the *Musharaka*. The latter will buy out the share of the former over a period of 5 years by using a share of its profits. Further, a pre-agreed share of the profits of the Company would be used to provide social benefits to the local community. The Association will sell all the cattle post-fattening to the Company, which will ensure quality standards and export the same to international markets. At another level, IRADA will provide *murabaha* financing for purchase of calves to the Association. *Murabaha* bulk financing to reduce cost of purchasing calves. The project by facilitating the production of 7000 export quality cattle every year and, by linking the farmers to the international markets, enhances incomes of 250-300 poor families.

Financing Method

The *musharaka* between IRADA and Wad Balal Company was formed with 95 percent of capital contributed by the former amounting to SDG 5.04 million and 5 percent by the latter. The *musharaka* would make direct investments in hangers, electric source, water source, and fattening supportive investment that include cooling storage, services facilities, securities facilities, living allowance of beneficiaries and technical support. The financing tenor is 5 years. The lease of the cattle fattening facility to the association would bring in rentals at 18 percent per annum on *ijara* of assets used for cattle fattening to the association. The revenues from *ijara* is shared between Wad Balal Company and BoK as per the agreed terms of diminishing *musharaka*. The *murabaha* financing amounting to SDG 4.26 million will involve *murabaha* to purchase calves for Wad Balal Association at 15 percent profit margin. BoK will provide 100 percent financing for calves in the first 2 years; which will gradually reduce to 25 percent in the fifth year.

Chart 2: The Wad Balal Project



Arrows denote specific activities as follows:

1. Diminishing Musharaka Agreement between BoK and Wad Balal Company (WBC) to create Fattening Facility
2. Bok helps farmers form Wad Balal Association (WBA)
3. *Murabaha* agreement between BoK and farmers represented by WBA to finance purchase of calves
4. *Ijara* agreement between Musharaka and WBA to use Facility in lieu of payment of rentals
5. Use of fattening facility by farmers to make the calves grow
6. Technical consultancy and training by WBC
7. Delivery of cattle by farmers to WBC
8. Sale of cattle by WBC in overseas markets

Non-Financing Services

As before, this initiative also involves a provision of a multitude of non-financing intervention/ services that include the following: technical support throughout project lifetime to ensure production quality and cattle vet services; establishing linkage with Wad Balal Company with access to market in GCC countries; assistance in managing the project accounts and formation of Wad Balal Association of farmers.

Risk Management

An agri-venture like Wad Balal faces several risk factors, many of whom related the marketability of the cattle that are reared by the farmers. The success of the project hinges on mitigating these risks to acceptable minimum. Below we list down some major risk factors identified by BoK and the various measures contemplated to address them.

- Diseases: The project provides on-site veterinarian services to treat and prevent cattle diseases.
- Lack of quality and specifications (e.g. health, weight) for export market: On-site technical services are provided to educate farmers how to raise the quality of their livestock and meet international standards.
- Unmet basic needs of farmers: Families are provided living allowance.
- Inability to market: The Wad Balal Company, which has strong export, links with the GCC countries have committed to purchase the cattle at a fair price.
- Lack of commitment by farmers: This risk is mitigated considerably by retaining the right with BoK to remove a shirking beneficiary and replace with another committed worker. This is

backed by stringent performance monitoring. Good performance is also incentivized with BoK having the right to distribute a larger proportion of profits based on performance and commitment. Performance of individual farmers is also monitored at the Association level.

5.3 Building Strategic Food Reserve

Under another program involving multiple partners, IRADA microfinance aims to purchase goods efficiently from farmers for sale to the Government of Sudan's strategic food reserve. This would replace the intermediary and ensure a better price for farmers for their produce based on official advance purchase rates determined by the Ministry of Agriculture. This ensures that the farmers' incomes increase and more farmers are motivated to produce for livelihood instead of only for subsistence. The other partners in this program are the Ministry of Agriculture and the Ministry of Social Welfare of the government of Sudan, the Zakah Chamber of Sudan and the World Food program.

Under this program, IRADA provides *salam* financing with a tenor of max 8 months. Its target beneficiaries include 73,000 smallholders under 878 Farmers Association in seven states (23,677 through direct contract, and 48,396 through *mudaraba* with other commercial banks). The program involves multiple parties in a multitude of roles. IRADA serves as the link between the farmers and other partners and in grouping the farmers into associations. The Ministry of Agriculture provides technical assistance for product quality and building the capacity of farmers groups. The World Food Program provides food for farmers during the planting period. Finally, IRADA provides for coordination and monitoring of partners activities and links farmers to local, regional, and global markets.

6. Lessons and Way Forward

Reducing poverty and hunger are among the biggest moral challenges of this century. Agricultural growth reduces poverty directly, by raising farm incomes, and indirectly, through generating employment and reducing food prices. Pro-poor agricultural growth, which is centered on smallholder farmers, requires creative and innovative interventions that involve provision of a range of financial and non-financial services to them. The latter include technical skill enhancement of the farmers as well as their empowerment through producer organizations. This paper undertakes a review of a range of interventions that have been undertaken in recent years to achieve the same in the Islamic framework. An alternative approach has been attempted in these experiments as the conventional products and services that violate some fundamental religious and cultural norms may not be acceptable to farmer communities in the Islamic societies. First, we present the key lessons from the case studies presented in the paper.

The conventional lending methodology for the rural poor is rejected in the Islamic framework on a fundamental ground. Islam prohibits any gain or price for credit. It does not permit any increase in the quantum of debt due to what we know as the "compounding of interest". Thus, while Islamic finance includes products that create debt, it curbs automatic expansion of credit. Given that the clients come from the poorest strata of the society, there is merit in a more "humane" form of credit that rules out penalties for genuine delays in repayment. The paper presents the case of IsMFIs offering *bai muajjal*, *murabaha*, *ijara*, *bai salam* where the quantum of debt obligation, once created and determined, is not

permitted to take any other value due to its restructuring. Nor are penalties a source of income for them.

A review of various Islamic modes that are used for provision of finance to farmers reveals that there is no one-size-fits-all mode, even though *bai salam* is widely seen to be the appropriate mode for agricultural finance. Further, Shariah-compliance of a mode does not by itself, ensure freedom from exploitation. As the examples show, salam can often involve exploitation when the advance price paid to the poor farmer is artificially pegged at low levels due to his/her weak bargaining power. Identifying appropriate organizational structure e.g. a farmer's cooperative may replace the vendor and thus prevent exploitation of individual farmers by the latter. Similarly, rates on murabaha and ijara financing can be and often are exploitatively high. In case of participatory modes e.g. mudaraba, musharaka and mudaraa the sharing ratio could be unfairly biased against the poor beneficiary because of their low bargaining power. Prudential regulation of markets is an important pre-condition to ensure healthy and adequate competition among the players and thereby, remove abnormal and/or illegal profits through mispricing.

Islamic finance discourages debt based products and encourages equity and partnership based products in general. Given that conventional MFIs derive their income from interest, they seem to be inclined to push their clients into larger and larger amounts of debt. In the Islamic approach, debt is not just discouraged; there are in-built mechanisms, such as *zakat* to address over-indebtedness of an individual. The paper documents the cases in Sudan where an institutional mechanism exists for use of *zakat* for curbing indebtedness.

Islamic finance requires “simplicity” in contracts where the rights and obligations of the parties are well understood by them. Even where an Islamic finance model includes future obligations, or composite structures, the uncertainty and ambiguity factor is kept to the minimum. The diminishing *musharaka* based models used in Sudan are apparently complex but quite “definitive” in terms of transfer of ownership of the key assets into the hands of farmers over a finite period.

While credit or finance is a key input for transforming the lives of the farmers, they often require a wide range of non-financial services. Identifying these non-financial needs and finding creative and innovative solutions thereto is critical for success of any intervention. The paper documents a range of such services being provided (in the projects in Indonesia, Guinea, and Sudan in particular) that include technical assistance, skill enhancement, procurement, production, warehousing, processing, packaging and marketing support and that underlie the success of these interventions.

A related question is how these non-financial services are to be funded. Should they be priced? The cases documented in this paper highlight both commercial and philanthropic approaches to the issue. While in the Sudanese examples, the cost are duly accounted for in the determination of profit-share for the farmers, the Indonesian experiment provides a *zakat*-funded approach. Indeed the inter-mix of philanthropy with a commercial approach is a key feature of the case studies discussed in this paper.

MFIs that focus on financing the need for physical assets by farmers through conventional or Islamic credit, or through lease often ignore the importance of providing for basic needs. It should not come as a surprise if farmers resort to diversion of funds from the so-called income-generating project or even distress sale of the assets (funded by MFIs) if their basic needs remain unfulfilled. Provision of safety net by IRADA in case of the Sudanese projects as it helps farmers establish their agri-ventures is perhaps a significant contributor to the success of the projects.

Community-driven development (CDD) is a recent experiment in poverty alleviation. Despite the success of this approach, a major constraint with conventional CDD is the recurring nature of funding requirement while recurring grants may not be forthcoming. This paper documents a case in Indonesia where *zakat* is used to fund subsequent phases of CDD. The Islamic CDD is free from the constraints facing its conventional counterparts, given that *zakat* is an annual recurring flow unlike the conventional grants that may be one-time or erratic at best.

The projects discussed in this paper not only seek to leverage existing skills, but also develop new skills. Specifically, the Indonesian and Sudanese interventions seek to take the technical skills of farmers to a completely new level, which should enable them to create wealth by applying better farming technology on a sustained basis. The Sudanese projects in particular use an approach similar to conventional venture capital funding (with some differences, of course) and focus on the economic viability of project. They carefully seek to identify risks and mitigate them. They also provide a unique example of combining benevolence with commercial viability.

To sum up, the case studies presented in this paper reveal some interesting insights into the alternative modes and models of Islamic microfinance that are in use to provide livelihoods, socially and economically empower the farming communities, enhance food security and alleviate poverty. The models and tools of Islamic microfinance display major variations as they seek to provide financial and non-financial support to the farming communities. While some Islamic microfinance institutions (IsMFIs) focus on the provision of micro-credit to farmers, following an approach similar to that of conventional agri-finance and microfinance institutions while ensuring Shariah-compliance of their credit product(s), a few others prefer a more comprehensive and challenging approach. The latter group of IsMFIs assume that an MFI must play the role of a pivot in a process of transformation, and in the economic and social empowerment of the farming communities. These IsMFIs adopt a “project” approach and provide support in a multitude of areas other than finance, such as, technology, procurement, production, marketing, business development, capacity building, and thus, ultimately steering the project to success.

However, in confronting the multitude of challenges facing the farming communities, the MFIs may have to limit their outreach significantly. While in case of credit-based finance, the size of financing per beneficiary is very small, perhaps in the range of USD100, the same is very high in case of project-based approach that seeks to finance the entire value-chain. Such partnership-based agri-finance may require large upstream investments; perhaps placing them in a distinct category of social impact investment and not in that of microfinance. For instance, the size of financing per beneficiary is capped at USD32,000 in case of Abu Halima Green Houses project. No wonder, while *salam*-based microfinance by IRADA directly targets over 23000 farmers, Abu Halima targets a meagre 125 agriculture graduates. This naturally raises the question: Is *salam* financing the best that Islamic finance can offer in the field of agriculture? At the same time, it is important to note that projects like Abu Halima and Wad Balal may have a far more significant long-term impact in terms of building capacities of farmers as also in enhancing food security. Such projects help create a new generation of technically superior and highly skilled farmers increasing the supply of and stabilizing prices of high-value foods. Further replications of such projects would also bring down the marginal costs. Another unexplored possibility in Islamic finance is the establishment of *awqaf* or endowments to take care of the upstream investments that create permanent or long-lasting facilities for use of farmers. Such investments need not be funded with bank finance. If so, the quantum of financing per beneficiary will significantly go down and the outreach of IsMFI may be significantly increased.

Another interesting dimension of the Abu Halima and Wad Balal projects is the contribution of grant by Ministry of Finance to the *Mudaraba*, which makes it possible to offer *murabaha* financing at a modest rate of fifteen percent. Given the widely expressed concern about affordability of high-cost microfinance, such a possibility offers great promise. In a modified model, the Ministry may easily be replaced with a dedicated *Waqf*, which can pave the way for affordable microfinance for the poor.

A unique dimension of the Wad Balal project is the fact that a pre-agreed share of the profits of the Wad Balal company (that serves as the pivot in the structure and would be eventually owned entirely by the Sudanese diaspora) would be used to provide social benefits. One may draw a line of comparison between such a corporate entity and a *waqf*, which dedicates a certain percentage of its profits for provision of specific social benefits. Indeed, with minor variations, the two project structures could easily fit in new situations and find acceptance in a variety of countries and regions. In the Sudanese scenario, several ministries of the government contribute significantly to the success of the projects. The active involvement of the ministries of the government in other countries may give rise to apprehensions and concerns about coordination and efficiency. As an alternative, the substitution of the institution of *waqf* for government may be explored.

References

1. Ahmad Kaleem, Rana Abdul Wajid, (2009) "Application of Islamic banking instrument (Bai Salam) for agriculture financing in Pakistan", *British Food Journal*, Vol. 111 Iss: 3, pp.275 - 292
2. Indonesia Country Report, Food and Agriculture Organization (2013) accessed from http://faostat.fao.org/CountryProfiles/Country_Profile/Direct.aspx?lang=en&area=101 on October 20, 2014
3. M. Obaidullah (2005), *Islamic Financial Services*, Scientific Publishing Center, King Abdulaziz University, Jeddah, Saudi Arabia
4. M. Obaidullah (2008), *Introduction to Islamic Microfinance*, IBF Net, India
5. M. Obaidullah (2008a), *Role of Microfinance in Poverty Alleviation*, Islamic Research and Training Institute, IDB, Jeddah
6. M. Obaidullah and A. Saleem (2011) "Innovations in Islamic Microfinance: Lessons from Muslim Aid's Sri Lankan Experiment" in *Shari'a Compliant Microfinance*, ed. S.Nazim Ali, Routledge
7. M. Obaidullah (2013), *Zakat Management for Poverty Alleviation*, Islamic Research and Training Institute, IDB, Jeddah
8. M. Obaidullah and N. Shirazi (2014) "Integrating Philanthropy with Microfinance: Models of Community Empowerment" in *Social Impact Finance*, ed. F. Atbani and C. Trullols, Palgrave Macmillan
9. M. Obaidullah, N. Shirazi, D. Muljawan and H. Izhar (2014) *Islamic Social Finance Report 2014*, Islamic Research and Training Institute, IDB, Jeddah
10. M. Obaidullah (2014) *Islamic Microfinance Development: Islamic Development Bank Experience*, Paper Presented at Third Islamic Microfinance Symposium, organized by GIZ and the Tunisian Islamic Economics Association at Tunis during March 05-06, 2014
11. Md. Abdul Wadud (2013) *Impact of Microcredit on Agricultural Farm Performance and Food Security in Bangladesh*, Working Paper No.14, Institute of Microfinance, Dhaka
12. M. Alim (2014) *Photo-documentation of Successful Development Initiatives in Indonesia: Case Study of Dompot Dhuafa Republika*, accessed from: http://sadaqaindia.files.wordpress.com/2014/04/dompot_dhuafa_case_study1.pdf on October 20, 2014

13. Nana Mintarti (2013), "Distribution Model for Productive Zakat: Case Study in the Empowerment of Poor Farmers Using Semi-Organic Farming Method", Unpublished Paper, Indonesia Magnificence Zakat, Dompot Dhuafa Republica
14. Pakistan Economic Survey, accessed from http://www.finance.gov.pk/survey_1213.html on October 21, 2014
15. Pakistan's Wasil Foundation Wins Islamic Microfinance Challenge, CGAP, accessed from <http://www.cgap.org/news/pakistan's-wasil-foundation-wins-islamic-microfinance-challenge>
16. The World Fact Book, Central Intelligence Agency, USA accessed from: <https://www.cia.gov/library/publications/the-world-factbook/> on October 20, 2014