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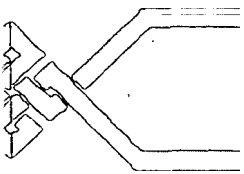
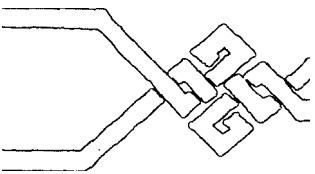
FINANCING AGRICULTURE THROUGH ISLAMIC MODES AND ISTRUMENTS: PRACTICALSCENARIOS AND APPLICABILITY

ISLAMIC RESEARCH AND TRAINING INSTITUTE
ISLAMIC DEVELOPMENT BANK
JEDDAH, SAUDI ARABIA





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In the name of Allah, The Beneficent, The Merciful

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FOREWORD

The Islamic Research and Training Institute (IRTI) was established in 1401H (1981). The objectives of the Institute include the responsibility to carry out research in the area of Islamic economics, banking and finance, to develop the capabilities of professional personnel in Islamic economics so that they may meet the needs of research and Shari'ah-observing agencies, to train personnel engaged in development activities in the Bank's member countries, and to develop database in the fields related to its activities in order to foster development in the IDB member countries.

This paper was conceived under the theme of Islamic Financial Instruments adopted by the Research Division during 1414H. The objectives of the study are to examine : the functional and operational activities and/or processes undertaken during the production and marketing of agricultural commodities; contemporary Islamic modes used by Islamic banks to finance the production-marketing processes; the significance of these modes; and assess the possibility of financing these operations through Islamic instruments.

The chapters of the study are arranged in such a way that the methodology and how the scheme of things are ordered are given in section two. In section three of the study, the functional attributes and definitions of salient features and operations of the agricultural enterprise are listed. Section four discusses methods used by Islamic banks in financing activities in the crop enterprise. In section five, possibilities of financing enterprises in agriculture through investment certificates, etc. are explored. The recommendations of the study are given in section six of the study.

It is hoped that the paper will encourage the reader to seriously examine the potentials in Islamic finance and methods of implementing these in contemporary schemes of mobilizing resources

for the agriculture sector in Islamic perspectives. If and when this interest is aroused, then the Research Division would have, at least in part, achieved some of its goals.

M. Fah' Khan
Officer-in- Charge, IRTI

SUMMARY

The objectives of this study are three folds, viz.:

1) To examine the functional and/or operational activities or processes undertaken during the production and marketing of an agricultural commodity and/or livestock enterprise,

   To examine contemporary relevant Islamic modes used by Islamic banks to finance the production-marketing process and to asses the significance of these modes with respect to dates of maturity and other salient features, and

3) To examine the possibility of financing these operations through Islamic instruments.

Section 2 explains the methodology adopted and how the scheme of things are ordered to achieve the objectives stipulated in the study. This is preceded by a brief introduction that links the goals of the study with the real-world agriculture of the member countries.

In section 3 production-marketing process in agriculture is discussed. The functional attributes and definition of the salient features and operations of the enterprise are highlighted. Sector linkages and the symbiotic relationship between agriculture and the rest of the economy is also defined. All these are emphasized so as to set the ground-work for the rest of the study.

Section 4 discusses methods used in financing operational activities in the crop enterprise. How Islamic Banks finance agricultural activities and operations are highlighted. Some of the most contemporary practices followed by these Banks are posited. Other equally relevant options including the traditional norms and perceptions of rural finance in the rural sector are discussed. Informal finance and its role in mobilizing rural sector finance is also considered

in this section. Linkages between formal sector modes of financing operations, instruments and markets are discussed. Finally in this section, the significance of different options and alternatives in mobilizing finance for agriculture are examined.

In section 5 of the study, possibilities of mobilizing financial assets by way of investment certificates, etc are explored. The core problem of tradition-based institutional and structural rigidities that confront the sector are discussed. Options that could be used, in the long-run, are drawn to develop a mechanism and therefore an instrument that would enable the transaction process to take hold. In this section, a modest attempt is made to explore practical methods and possibilities of identifying some of the modes highlighted in the preceding sections into instruments which could be negotiated in the secondary market. In the final section, (i.e. Section 6) some concluding remarks are given.

I

INTRODUCTION

I was asked, at an early stage of this study, the fundamental two-tier question why, for instance, was I concentrating on financing agriculture separately from those in other sectors and programs, and how could Islamic instruments be used to finance these sector requirements.

These quires, like many others, imply the reservations some academics have on many things about the viability of agriculture. In particular, whether agriculture in the less income countries can be subjected to the rigorous conditions and criteria that prevail in contemporary global markets for inputs and products. And whether such can be undertaken without a resort to the complex system of price and product support mechanisms (vide the stubborn issued in the GATT negotiations). Doubts are ubiquitous on whether less income member countries need their own Islamic financing mechanism different from the interest-based conventional alternatives, the priority that this should be given in the policy perspective of the member country goals, and if the need is genuine, how could one move from the modes peculiar to Islamic finance into the realm of stock, certificate and bond markets. In other words, are Islamic financial instruments realistic alternatives that could be entertained in the agricultural sector in Muslim countries?

The agriculture' sector, in the less developed member countries, is wrought with many problems. The sector bears the burden of decades of neglect on the part of governments of these countries. Funding for the agriculture sector was, until recently, given a low priority rating relative to those for the industry and other urban-based

[1] I will use the expression "agriculture" or "agricultural sector" to mean "the rural economy". These expressions are therefore used interchangeably for 'the purpose of this study.

manufacturing and service sectors. This sector also bears the burden of supporting the largest concentration of member country populations and ensuing economic activities including, among others, small-scale farming enterprises, small-scale non-farming interests and supporting social institutions and programs.

"In a world threatened by a serious population pressure and consequently an acute food shortage, any food production facet should be thoroughly utilized. In view of the continuous degradation of the environment and the current problems of draught and desertification, specially in the less-developed countries, more efficient means of natural resources conservation and use should be adopted. As finance is one of the major inputs fostering greater and more efficient production, new methods of financing agriculture, specially benevolent methods as Islamic methods, will, without doubt, contribute most favorably to increasing food production".[2]

Structurally, enterprises in agriculture are often in the form of small holdings owned by families and households in rural areas. Private ownership is, by and large, the predominant attribute in the ownership of. properties and assets. Most of these small-scale agricultural and non-agricultural enterprises, if left to themselves, would have . limited capacity to generate revenues beyond the equivalents of subsistence needs of the families. This is a reflection of the production capacity which, by the standard of other sectors, is small and contingent to the immediate needs of the household in the rural sector. Naturally, therefore, asset holdings, properties and products of these holdings and/or activities within that perspective, are not amenable to the laws of modern-day. market transaction.

[2] This paragraph was contributed by Dr. Badawi -B. Osman in order to strengthen this section on agriculture sector and its financing needs. I am grateful.

Even though rural markets are free arenas where traders do in fact transact goods and services, there are certain outstanding rigidities[3] that remain defiant to the market impetus and/or stimuli. Among these are transfer of physical/financial properties and/or assets. Informal transaction takes precedence over formal market transaction. The latter being typical of the more sophisticated market place and/or centers.

The informal sector has the legitimacy and blessing of rural communities. Assuming no other lucrative alternative is available, it is more in line with the rural tradition for farmers to go to the middleman or to resort to the better-off neighbors or the money lenders in order to dispose of surplus grains (i.e., beyond needs of the household) or sell livestock in order to circumvent the need for a short-term credit. Households in the rural sector also have at their disposal endogenous and informal saving and credit associations that are capable of servicing their physical/financial requirements. Formal finance, however, has yet to evolve in the same degree and regularity as is practiced in the manufacturing or other sectors often in the urban localities.

These are, in essence, the crux of issues facing contemporary agriculture and implicitly, therefore, the rural sector in most of the Muslim countries.

The reality in the agriculture sector as discussed in the preceding paragraphs is such that it is still conceived in the same outdated spirit as our forefathers had reconciled this to be. The attributes of this ancestral image of agriculture seems to have a strong influence on how the modern man perceives this sector today. The view of the enlightened few, however, is that this sector can be as competitive as those in the industry, aviation, telecommunications, etc.

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[3] Among these rigidities are the ubiquitous government subsidies and support programs in which direct interference is made to the market mechanism to decide the mix of products, prices and resource allocations. This, in essence, makes the Uruguay Round (GATT) a rather difficult process.

if it is given the necessary requisites it needs to undertake the adjustment and therefore impart on the changes needed.

What is needed is a transition from subsistence-based autarky, which gives the sector the familiar appendage of being permanently classified as the traditional producer of the raw material for the industry, into diversification of products, exposure, adoption to market conditions and adjustments to technologies and economic realities of . the contemporary market. This transition is the crux of the problem confronting agriculture.

I will attempt, in this study, to define a venue that could be used as a window for enhancing agricultural commodity and product markets, and in so-doing make the change into modernism a practical way of life for the majority of agriculture-based populations in the member countries.

II

METHODOLOGY

In order to ground the objectives sought by the study to reality, attempt will be made to define major structural and/or functional activities that are undertaken by those agents who are involved in implementing the production-marketing process in agriculture. I shall concentrate on the physical inputs (in this case land and water), the biological-chemical- technological inputs (i.e., chemicals as in fertilizers, pesticides, etc., and mechanical inputs such as machinery, equipment, and other necessary tools of trade), the human capital input, the information-extension interface and contributions to the process and, finally, finance.

These complex set of inputs will be defined in terms of when they enter and in what magnitude they subscribe to the production-marketing process in agriculture. Once this is defined, I shall then attempt to identify the nature and scope of financing required by each activity in the operational-marketing process.

The finance requirement of this production-marketing process will be broken down into two major categories, viz. informal and formal finance. Informal finance will concentrate on customary and tradition-based relationships between buyers and sellers of physical goods and assets in the rural economy and methods they use to finance agricultural operations. Other informal schemes such as the traditional savings and credit associations will be illustrated in this context. Among the latter category, i.e., formal finance, contemporary formal Islamic financing modes peculiar to agriculture or those that have strong applications in agriculture, will be discussed.

Potential futuristic modes which, though at the stage of theoretical experimentation, could have possibilities of financing agriculture will be discussed. These modes will be examined subject to their adaptability to the real-world conditions of the sector. In

particular, the merits and advantages of linking a number of individual modes simultaneously, or alternatively, between different tiers within the same mode as the case is with the so-called **compound modes** will be examined. The significance of these modes in financing the production-marketing process either singly or in combinations will be examined with a view, especially, to assess their (a) role and capacity to finance short-term agricultural operations, and (b) significance in mobilizing steady and stable supply of funds for operations in agriculture which have medium to long-term maturity attributes.

Having defined the production-marketing process and the financing requirements the process subsumes, the study then links both the modes and the finance requirements with the production and marketing process. Finally, attempt is made to define how practical it is to transform the observed modes into instruments that could be exchanged in appropriate secondary markets most suitable for agriculture. Since this last gesture is, by definition, a new ground to be broken, I will attempt to conceptualize ways and methods of transcending the fundamental problem of tradition-based institutional and structural rigidities which, in fact, characterizes the rural economy. Since also this is the apex of any future attempt to transform the existing market and conditions thereof, I see my contribution to this area of study sufficient at the level of only drawing some realistic options that can be used as a basis for future inquiries into any further transformation efforts.

III

AGRICULTURE : THE PRODUCTION - MARKETING PROCESS

In agriculture, the production process refers to the stages of transformation in which a factor or a set of factors are combined in such a way as to create a product or a set of products that could be traded in the market or used to satisfy some immediate need. The process entails creation of value added on the product which could further be enhanced through manufacturing into still higher valued goods or services. Similarly, products generated through the process could be used as raw materials for the production of other derivatives thereby generating possibilities for diversifying the use of basic factors. Simply stated, production is the process of making creating utility or useful goods and services and putting these finished goods at the disposal of the user.

The utility created in the productive processes may be classified into utility, place, time, and possession utility. Farmers create form utilities by producing a ,commodity or a livestock product. Transportation adds place utility by moving the product from the source to the market. Storage, freezing, etc. allow the same product for later use, hence addition of time utility. Efforts, by many, to transfer the product to those who could better use it, add possession utility. (See, Kohls, et.al., p..5). It is a common practice, therefore, to refer to those who are primarily engaged in the creation of form utility as producers of goods. Those who are engaged in the creation of the other forms of utilities are usually referred to as producers of services.

The production process for the small-scale farm enterprise often begins with either crop or livestock production. Crop enterprises are more common than livestock enterprises simply because the latter do not entail intensive value added formation since dependence is on pasture (or natural grazing). This would be a contrast to the modern

feeding practices common in feedlot operations which, by virtue of their intensive use of technological inputs, entail production of higher value added products. For the purposes of this study, I will concentrate on the production process that emphasizes the crop enterprise. Livestock enterprise characteristics and/or peculiarities will also be highlighted in the course of the study where ever these are relevant.

THE CROP ENTERPRISE : ACTIVITIES, RESOURCE REQUIREMENTS, PRODUCTION AND INTER-SECTOR SYMBIOSIS

1. Operational Activities

The production cycle of the crop enterprise normally starts with a set of standardized operational steps that must, conventionally, be implemented sequentially. To begin with, the choice of the enterprise and the decision to produce a particular crop must first be made. This is then followed by preparation of the land' which entails clearing, leveling, ploughing, etc. and installation of irrigation and drainage systems. This set of activities fall within the primary activities of setting up the groundwork and erecting the necessary installations required for the enterprise. The second set of activities center on cultivation
The focal point is the planting activity, then the husbandry and the interim management activities and services which become due at this point in time. This is the pre-harvest period which entails serious effort on the part of the farmer. Activities in this step range from weeding, application of nutrients (fertilizers) and prevention of crop damage which might be inflicted by pests and/or other diseases. In practice, this is the most critical period in the life cycle of the crop enterprise because whatever serious problems that may remain uncorrected at this stage, would tend to be carried through to the harvesting stage

[4]It is assumed here that land, which is prepared for the crop enterprise, is in the hands of the entrepreneur or the farmer. Alternatives to this scenario will be discussed at a latter stage and in the context of financing the crop enterprise.

which is the culmination of the long gestation period from planting to harvest.

When the crop is harvested, then the objectives declared become realized. If the crop enterprise was primarily undertaken for the sole purpose of subsistence, then the farmer's production cycle stops there. However, if the decision to implement the crop enterprise was to market the produce, then a further stage comes up for implementation, viz. post-harvest activities which entail storage, transportation, sale and disposal of the crop. In other words, the whole gamut of activities contained in the marketing process are activated.

The degree to which these standard steps are instituted by the individual farmer and/or entrepreneur depends, naturally, on the scale of the enterprise proposed. The scale of the enterprise in turn, would depend on the objectives stipulated by the farmer and/or the entrepreneur. If, for instance, the prior goal is set as the production of food crops sufficient to meet the farmer's needs, then to achieve this goal would require mobilization of those resources in hand without any resort being made to acquire exogenous help from outside the farmer's capabilities. This is the familiar case of an autarkic production scenario wherein the small farmer relies solely on the land he has at his disposal in conjunction with his own labor. Other factors, which may enter into his production possibilities frontier in the context of this subsistence mode, are assumed to be constant.

Should the scale of the enterprise, however, be large enough such that the goal is to produce primarily for the market, then all the rigidities subsumed in the previous subsistence and/or autarkic scenario should be relaxed. Operational activities under this open, market-oriented crop enterprise will involve the following major decision variables, which must be satisfied simultaneously either from endogenous sources attributable to the farmer or through combination of endogenous-exogenous sources, viz. : land acquisition, pre-planting activities, pre-harvest management activities, harvest activities, and finally, post-harvest activities. Fig. 1, illustrates these operational activities in a schematic representation.

Fig. 1

CORP ENTERPRISE - ACTIVITIES AND RESOURCE REQUIREMENT

Land

Post-Harvest Activities
(L_b, K_f, K_m, K,...)

Land preparation,
(K_b,K_m,K_h,K_f....)

Harvesting
(K_b, K_m, K_r, ••)

Prep. of Irrigation and Drainage Systems
(K_b, K_m, K_h, K_f...)

Pre-harvest Mngt.
(L_b, Kc, K_m, K_f …)

Cultivation & Planting
(L_b,K_c K_b,K_h, K_f)

This study focuses on the latter scenario and develops the mix (or combination) of resources required to implement this open, market-oriented production relations crop enterprise. Discussion in this chapter will culminate in the presentation of the production function for such a mix of resources and inputs that is commensurate with the said crop enterprise.

2. Resource Requirements

The production cycle begins with the land acquisition activity. Without land, there would not be an enterprise to begin with. Land may either be permanently bought for this purpose or it may be gotten through such other temporary arrangements as ownership of its usufructuary rights for a specified period on the basis of *Ijara,* etc.

Once land is secured for the enterprise, the pre-planting or preparatory activities may be unleashed. Here, the specific set of activities listed earlier should be associated with resources they require in order to prepare the land, install the irrigation and drainage system and to finally put the seeds in and cultivate.

Land preparation, in the autarkic condition, calls for the farmer's labor input. Where the farmer cannot do the work, i.e. prepare the land, then the farmer must make other arrangements to get the labor force required taking advantage of the rural setting and the habitual norm that is his way of life. While these are possibilities that should logically be entertained, the reality in the subsistence sector is such that both land and labor are provided by the subsistence farmer without any resort being made to acquire them from outside the set of resources known to exist within the family potential.

Preparation of irrigation and drainage systems call for a gamut of complex set of inputs and therefore resource requirements. Depending on the scale of the enterprise, this activity may be characterized by installation of the essential canals that deliver water to where it is needed and others which drain and dispose of redundancies. Labor may be the only critical factor needed to do this. In its more complex form, an irrigation and drainage scheme may be composed of a multitude of complicated structures constructed subject to most advanced engineering and structural know-how. Under these conditions, a maze of canal networks would be constructed that would service thousands of farms or millions of beneficiaries. Dams, barrages, run-off basins of different sizes and resource requirements would be involved. In such a case, besides labor, a complex set of mechanical and human capital, and a massive infusion of finance will be required to set up this sort of an irrigation-drainage system.

Operational activities in the planting and cultivation stage require labor, chemical-biological-mechanical[5] inputs and a set of specific human capital in the form of skill and professional acumen. All must be coupled with the finance needed to acquire the necessary ingredients to begin the process.

The post-planting or pre-harvest activities comprise .management decisions that concentrate on insuring that the crop cultivated does not fail in this interim period to bring about expected yield. Applications of pesticides to fend off diseases and predatory inflictions are often necessary at this critical juncture. Finance is a necessary input in order to ensure right decisions are made and those input requirements are available when needed to bring the crop to fruition. The human capital component in the form of management and skills is, therefore, most critical at this stage of the production cycle.

The activities in the harvesting state requires labor, mechanical and financial inputs. The human capital by way of skills and know-how is' also subsumed in the application of these factor/input such that without its systematic execution, the yields expected would adversely be affected. Once the crop is harvested, the production cycle comes to an end and the post-harvest activities become due.[6]

The post-harvest stage concentrates on marketing activities and as such becomes due immediately after the crop has been harvested.

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[5] The chemical-biological-mechanical inputs referred to here may be illustrated through the fertilizer, hybrid seed and mechanical technology respectively, which may be employed sequentially to undertake the cultivation function.

[6] This would depend on the scale of the production achieved which, implicitly, underlines the fundamental goals and objectives for which the enterprise was established to begin with. For subsistence farmers, therefore, this stage practically defines the end of the cycle. For larger. enterprises, who have in mind the goal of marketing the produce, however, there would still be remaining post-harvest activities yet to be executed.

Here, expertise is required in the collection of market information and collation of the complex set of services amenable to the transformation and marketing of the crop. In particular, this would involve, depending on the scale of the crop, transportation, storage and insurance of the produce[7]. All of these activities would normally be imputed to a financial value which will be born by the entrepreneur.

3. Resource Mix and the Production Function for the Crop Enterprise

The complex set of resource requirements for activities in the crop enterprise may be listed as follows, viz. :

- For acquisition of land, land (L_n) and finance (K_f) are required.
- For land preparation , labor (L_b) , mechanical technology (K_m), human Capital (K_h) and financial capital (Kr) would be required.
- For installation of irrigation and drainage systems, labor (L_b) , mechanical technology (K_m), human capital (K_b), and finance (K_f) would be required.
- For pre-harvest management activities, we would require: labor (K_b)[8], chemical inputs (K_c)[9], human

[7] The crop insurance coverage may be defined retroactively to cover the activities in the preceding stages such that the crop, upon planting, becomes subject to an insurance policy against flood, frost, drought or any other risk-bearing natural or man-made disasters to which agriculture is prone.

[8] As the case in weeding by hand (i.e. manual) which is common in subsistence agriculture.

[9] This is reflected in the eradication of weeds through application of pesticides and mechanical technologies therein deployed.

capital (K_h) - and, implicitly, the financial capital (K_1) needed to implement this function.

- For harvesting activity, we anticipate the requirement of labor (L_b), mechanical technology (K_m), human capital (K_h) and finance (K_f).

- For post-harvest activities, the sale, transportation, storage and crop insurance service would require-labor (L_b), finance (K_f), expertise (K_h), and mechanical technology[10] (K_m).

These functional relationships may be summed to enlist all the possible combinations or mix of resource inputs that would be required by the crop enterprise in its production-marketing process. Fig. 1. illustrates the mix of resources that would be activated in this process. In this respect, we would like to note that the following peculiarities are distinctly conspicuous, viz.

- In the case of subsistence autarkic crop production, there is evidence of less complexity in the mix of resources. Land is combined with labor input to generate the output required. No other significant factors are mobilized in this scenario.

- In the case of crop enterprises whose objectives are to produce for the market, there appear to be a complex set of options possible under which the fundamental factors could be combined. Taking this into account, we find that there are four major inputs or resources that

[10] Here, the transportation function would require lorries or other automotive means that would carry the harvest to the market place. This would be in contrast to carrying the harvest on animal back (e.g., mules, donkeys, etc.) or delivery by humans, as the case is with subsistence production.

stand out significantly relative to the aggregate mix of deployable complex of inputs, viz.:

- The chemical-biological-mechanical inputs,
- The human capital component which is embodied in the skill and expertise of the entrepreneur,
- Working capital which is required to finance day-to-day requisites of the operation, and
- The information-marketing and services-related capital.

By definition, these are all components of what is known as capital. The first series in sub-item (a) are the technological factors, while the second is the human capital and third, the financial capital. This peculiarity emphasizes the significance of capital in agriculture and implicitly the role this is likely to play in any transformation effort that would lead the sector away from the autarkic and subsistence realm. The absence of these particular set of inputs is a familiar characteristic of the latter mode of production.

Capital, as defined above, is a dominant factor in land preparation, establishment of irrigation and drainage systems, planting-cultivation activities, post-harvest, harvest and in marketing stages of the crop enterprise. This factor enters into the production cycle in more than twenty five activities. The composite capital (K^*), therefore, is an attribute that the contemporary agriculture must acquire in order to shed that negative appendage of backwardness and to use it as a springboard to catch up with the industrial sector. This potential has never been exploited in the past, thus the argument enlisted in the introduction that agriculture was neglected and given a lower-priority rating relative to others in the economy of the lesser developed countries.

Assuming that the output of the crop enterprise can be defined as Y_{cr} for any production season, then the global production function that combines the operational resources at hand could, functionally, be stated as

$Y_{cr} = f (L_n, L_b, K^*. /Other factors held constant)$ (1)

Where L,, denotes the factor land,

L_b denotes labor, and

K^* is the composite capital required to finance the following inputs, i.e., chemical inputs K_m biological inputs K_b, mechanical inputs K_m , skill and expertise input K_h, information-marketing services inputs K_r , and working capital K_f .

Each of the above, intern, can be expanded such that:

K_c is composed of fertilizer (K_{cf}), pesticides' (K_{cp}), or other chemical-based inputs (K_{co}).

K_b has the following constituents, viz.: hybrid seeds (K_{bh}), embryo-based technology as in artificial inseminations and/or propagation (K_{be}.)

K_m is made up of mechanical technology (K_{mm}), equipment. (K_{mc}), and tools (K_{mt},).

Finance K_f is composed of the working capital (K_{fwc}) , and other forms of financial infusions. (K_{wot},), ...

and K_r, stands for the marketing and related' services which, in turn, is made up of market information (K_{rmi}**) ,** management and expertise (K_{rmn}), crop insurance $_{(Kmins),}$ and other market-related inputs (K_{rot},).

4. Inter-Sector Dependence and Symbiosis

The transition from autarky, which is implicit in the subsistence' production, to crop enterprise subsumes three important conditions, viz.:

- that procurement of K^* would allow the autarkic/subsistence agriculture to transit into advanced entrepreneurial capital-intensive enterprise,

- that the composite capital K* that is required by the crop enterprise will have to be procured exogenously from the financial and capital market in the economy, and

- that such a market is tenable and is readily accessible to the entrepreneur.

These conditions serve the purpose of linking the agricultural sector to those in the industry, public services, and banking and financial markets. Such a symbiosis is essential because, an agricultural enterprise fashioned under this structure, will, by necessity, have to depend on others for its essential inputs. For instance, the composite K" will naturally have to be provided by those supporting sectors. In reciprocity, agriculture will have to provide these sectors with food, fiber, and other physical raw materials where these are needed. On other occasions, it will have to create a demand for such services as may be generated by those in the financial market. A symbiosis of this caliber is likely to enhance the expansion of the enterprise effort in agriculture. Benefits for both clients would continue to grow subject to the scale of mutual support forthcoming from the parties concerned.

IV

FINANCING OPERATIONAL ACTIVITIES IN THE CROP ENTERPRISE

1. PERCEPTION ON RURAL FINANCIAL MARKETS

There is strong evidence in the literature that the symbiotic relationship between the financial system and development is often not clearly posited. Small savers and those who seek cheaper credit are adversely affected when financial markets are used to offset low agricultural prices - something that is familiar in this particular sector. Other important characters of the sector and properties thereof are equally ignored. The contribution of voluntary savings mobilization through such traditional norms, at least in the context of the rural sector, is neglected. Fungibility, in so far as credits procured could be used to satisfy other needs than it was originally proposed, is not given sufficient credo or justification in the eyes of those who provide credit.

Rural credit programs are intended to help farm households make changes in their economic activities. Some credit programs attempt to stimulate a specific type of production, such as corn or dairy farming. Other programs promote the purchase of modern inputs, such as chemical fertilizers, pesticides, and hybrid seeds. Still others are meant to improve the local, traditional breeds of cattle to more productive ones. Credit could also be directed towards investment in more capital intensive goods such as irrigation pumps or complete structural systems. Or they may be directed to investment in farm machinery, improvement of land and ,preparations thereof.

Rural credit programs are usually intended to alter the production decisions by providing the funds needed for a particular production process. This opportunity does not, however, confine itself to production decisions alone. In addition, decisions affecting the consumption norms of the household also become exposed to this

overall effect of credit. Economists have explained this by pointing out that in the case of rural household, the farm and the farm household are a single financial entity. As such, both would use the credit and at the same time supply the funds, labor and tangible inputs employed in the farm. '(See, Von Pischke, et.al. p.101).

Farm credit has also been used to expand the supply of loans (in the conventional sense of lending) rather than to undertake some -of the most difficult jobs as land reform, or help behavioral change to take place as the case is for accepting new technologies. Some policy makers have used this perception in order to affect the shape of rural 'institutions and facilities required by communities in the rural sector. Others have attempted to use the concept of cheaper credit to compensate the rural sector for the decline and deterioration of the resource conditions and economic policies as a result of price controls and overvalued exchange rates. According to this perception, "increasing the supply of agricultural credit appeals to the widespread belief that many farmers are unable to 'adopt profitable new technologies unless they have loans". (See, Von Pischke, et.al. page 100). This explains why governments in the many low income countries resort to this option in order. to encourage adoption of new technologies by their rural constituencies.

Credit programs, in general, subsume ability of farmers to save. The traditional argument of savings capacity which is contained in the macroeconomics theory ' of savings suggests that this is, in effect, a residual fund leftover from consumption during any one period. This conception needs to be adjusted according to the real-world conditions and traditions of the rural behavior. The latter would reflect the norm if it is assumed that savings is what is left of the receipts when spending takes its own course in any one given period of time. As such, "differences between the flows of receipts and expenditures provide a potential for financial intermediacy and creates the need for a convenient place and form in which liquidity can be held". (Ibid, page 102).

It must also be said that every farmer saves no mater how small these savings might be. Taking into account the seasonality attribute of agriculture, the tendency to set aside some funds for a rainy season, so to speak, is a critical attribute of the rural sector and that this should be taken into consideration when assessing the financial capability of the farm.

Factors Affecting Credit Supply for the Small-Scale Enterprise

A number of factors affect the supply of credit in agriculture. The following are among the most common, viz.:

- Credit, to begin with, may be the bottleneck either because it is unavailable or, if present, it may be inadequate.

- Farms and non-farm enterprises are usually heterogeneous in the sense that the goals and objectives for which credit is sought may be diverse depending on the requisites of the farm and/or non-farm enterprise,

- Lenders generally perceive high-risks in small-scale enterprise lending just as they do with small-scale farmers.

- Small-scale businessmen almost by definition have limited reserves to withstand diversity.

- Administrative structures of some larger banks which could have served small enterprises in agriculture ironically work against making loans in rural areas.

In conventional borrowing, the small-scale sector has strong reason to compete for credit because of the large number of competitive firms in the market. In the absence of a competitive edge, small firms are likely to go bankrupt and the rate of turn-over may be large for such enterprises. In the absence of a substantive collateral

which may be pledged by the farmer or the small-scale enterprise[11], this tends to aggravate the situation.

The symbiosis between small-scale enterprises in the rural sector, however, tends to be strong irrespective of the challenges that confront rural sector. Small-scale non-farm enterprises are usually inextricably tied to the fortunes of the farming sector. Accordingly, "when harvests and prices are good, farmers have income with which to pay bills and contract for new goods and services, but when yields or prices are poor, so are farm and non-farm firms. The rural lender will have limited opportunity to reduce the risk of his total portfolio through non-farm loans" under these circumstances. (See, Mayer, p.114).

Informal Finance

Modern finance may not be very relevant for subsistence economies where trade consists of small amounts of goods traded under barter. Farm and non-farm enterprises, in general, tend to make use of financial services and opportunities more seriously when they specialize in production, attain greater diversification and find justifications for greater investments in the market for non-farm firms. Thus, loan repayment will likely follow a similar pattern for technologies and inputs.[12]

If modern finance can not penetrate the traditional norms and fiber of the rural subsistence sector, then there ought to be other possibilities of either modifying the system as it is now, or coming up with a totally innovative alternative that would contribute to the improvement of the sector's potential to adopt the technological inputs required to establish productivity increases and diversification. The

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11 Collateral's offered by these small-scale enterprises may either fetch a law value in the market, or there may not be a good market for them to begin with.

12 This is the subject of discussion of part two of this section and most of material in the rest of the paper.

role of informal finance in the context of the rural subsistence economy may thus be considered as one in which changes could be delivered to those who have the capacity to live with it. Following is a historical evidence of the potential for informal finance as a source of capital in some lesser developed countries.

Informal finance in rural areas of many developing countries has always been a social, economic and, sometimes, benevolent undertaking. This simultaneity is often strong in Muslim societies wherein the added function of imparting on an activity for the sake of Allah takes on an extra weight and/or utility in its own right. How the objective of the fund is defined depends on the uses to which the fund is to be put at the end. Once this is defined, however, mobilizing the fund takes a social, economic and/or benevolent priority among those who subscribe to its formation and/or implementation. These subscribers, in effect, create a voluntary savings and/or credit association of a sort unique to their social and financial realities.

There are different methods of mobilizing an inter-group or inter-community fund for a particular objective in the context of the rural community. The target may be a person or a group of persons. The end use (i.e., the purpose or objective), to which the fund is to be put, may be to fill-in a specific short-fall in a financing arrangement or it may be geared to the alleviation of a particular financial gap. It could also be for the purpose of availing to a specific target group the opportunity of starting an economic endeavor or meeting the working capital requirement of an already existing small scale enterprise.

Even though economists have not given this concept the attention it deserves, literature, nevertheless, suggests existence of a reasonable degree of support for this conjugate socio-economic cum benevolent method of mobilizing funds. Below, I will attempt to illustrate a number of scenarios that take into consideration the backgrounds, roles and significance of some of these methods.

A. Rotating Savings and Credit Associations (ROSCA): The Case of *Hagbad* Among the Somalis

The term ROSCA[13] was coined together by a Dutch economist. It refers to, in his words, "a group of participants who make regular contributions to a fund which is given, in whole or in part, to each member in turn…The first collector receives an interest-free loan from all the others. The last in line is saving money as he extends credit to his fellow members. The others alternate between debtor and creditor positions. (See, Bouman, pp.36-47).

Among the Somalis, especially in the Northern areas bordering the Red Sea, this concept of rotating savings and credit association is very common. Somalis have perfected the idea to fit the circumstances of their communities wherever they may be found. You are, therefore likely to find *Hagbads* in rural hamlets in Somaliland, in villages and cities in the interior as well as in New York City, Hamburg, Jeddah or nearly all places where there are at least a dozen or so Somali families taking residence.

The most common version of this informal finance is based on trust among a number of people who live together in a particular place at a particular time. Several factors must be taken into consideration when mobilizing *a Hagbad.* Important among these is that there must, initially, be a collective confirmation of existence of a need, by the group members constituting the *Hagbad,* to pool funds. This confirmation is then coupled with purpose so that mobilization of funds is meant to satisfy a particular objective or goal. This could be an individual desire by a member of the group to mobilize capital for a small to medium-sized economic or social project. Or it could, alternatively, be for the purpose of meeting expected personal consumption and/or expenditure outlays by the individual. Individual

[13] It must be emphasized that the terminology is the only novel discovery in this regard. The idea, in and of itself, is as old as the culture in which it is practiced. This distinction is very important lest credit goes to those who do not owe it.

needs are summed to form the global objectives of the association. It is not necessary, as a rule, that the objectives of each individual be expressed in public meetings. However, if one wishes to be given priority in the placement of individuals in the list, he/she would have to come forward with such an information voluntarily.

Once the need and the objective for the fund is defined, then the promoter[14] of the *Hagbad* takes up the job of constituting the procedural norms to be followed by the fund. These procedures are communicated to each member of the group verbally and every one is expected to respect and follow them through.

Several characteristics form the core structure of the *Hagbad* procedures. The promoter must, among other things, ensure the following:

- That members are trustworthy. This requires knowledge of every person's character, social status and relationship with those he or she associates. In other words, a complete assessment of the social and inter-personal relationship of the proposed candidate for the *Hagbad* vis-a-viz. others in the group.

- That the potential candidate for membership in the *Hagbad is* eligible, has a reasonably good credit-rating and is willing and able to make payments as planned.

- That the procedures to be followed are simple and easy to implement,

[14] The promoter is essentially the founder of the fund. By the time the fund is established and all the members are assigned their roles, the promoter is left to insure that nothing, on the part of the members, go wrong and that problems are resolved so that the last person in the line will eventually get paid. This is a very difficult job that requires knowledge of psychology of individual personalities involved in the fund, experience in conflict resolution, and a good deal of management skills.

- That members are accessible to the promoter so that information and other relevant news of. the fund can be easily communicated to all.

It appears that these procedures are simple and flexible enough to encourage people to form such an informal finance association. Other advantages of the *Hagbad* include adaptability to many purposes, smallness of the group which may range from 12 to 30, ensures members will pay according to the schedule, and that eligibility, credit worthiness and repayment conditions can easily be satisfied. The regulatory procedures are equally simple relying, in most cases[15] on the social rules and norms common among the Somalis. In order to minimize risk of fraud and/or default, payments may sometimes be required to be made in public meetings of the full members of the fund. This is normally practiced when new members whose backgrounds are not familiar to the promoter make up a large proportion of the group. However, once confidence is re-established among the members, the trust condition is re-instated and everything is left to take its course.

It is important to emphasize that arrangements for receiving credit by members through the *Hagbad* depends on the financial circumstance of the individual members themselves. If someone has or is confronted with a financial difficulty, he/she is likely to be placed in the forefront of the list such that others would readily sacrifice their places for him/her. This defines how prioritization is set among the.. members so as to systematically order the sequence and position of each in the list. This *Qard Hassan* has a built-in Takaful element which tends to appeal to the Somali *Hagbad* enthusiasts. Payments are made in such a way that the individual's objectives of satisfying his needs take priority. For those living abroad, this priority may, for instance, be meeting the school fees for a child or this may be required to make

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15 This mechanism is so flexible that it can suit a multitude of diverse objectives and subsumed group requirements. These can be *Hagbads* that address the needs of shoeshine boys in Hargeisa on those that are established by the Somali expatriates' wives in the Gulf countries.

an advance payment of rent. When financial pressure is on, the proceeds from the *Hagbad* could save the family from a great deal of anxieties. For those in the rural areas, the fund is usually meant to meet either investment requisites of land
improvement, purchase of machinery, or it could be used as the working capital outlay needed to complete a small-scale enterprise requirement.[16]

B. Group Lending/Borrowing

The concept of group lending, as an important mode of servicing small-scale enterprise needs, is considered a precursor to the idea of cooperative credit facilities. This sort of scheme is geared towards servicing the needs of a group of small-scale entrepreneurs who wish to pool together to secure loans. In recognition of the fact that lending to an established association or an individual involves high cost for both the lender and the borrower, the pre-cooperative association is seen as practical alternative. To resolve this particular cost concern, the idea that small farmers or venders should be encouraged to utilize credit through their pre-cooperative association was floated. To do this, it was necessary that the financial support of a potential lender be forthcoming. Most of the non-governmental agencies favored the scheme because they felt that such would directly affect the quality of life of those who might be directly involved. Hence, support for a great number of small-scale enterprises in many parts of Africa.

In group lending operations, in Malawi for instance, the security for credit repayment is normally provided by the joint liability of the group members. If a default occurs on obligations to the lender, credit to the whole group is stopped until the default is corrected. This may

[16] Similar ROSCA arrangements have been reported in Ethiopia, Cameroon, parts of India, Trinidad and in other LDCs. The *Jam'yat Al-Khayriyah*, which are common in the Middle Eastern Arab countries, have similar purposes and functions. The latter, particularly common in rural Egypt and some localities in the *Bawadi* (Badiya) of Saudi Arabia.

cause the entire group to be deprived of farm inputs such as improved seeds and fertilizer 'for the growing season, which would result in a drop of production. (See, Shaefer-Kehnert, p. 279).

In order to remedy this operational problem, a security fund is created. Borrowing farmers pay a percentage of the loan amount as a deposit into a common fund that is kept in trust by the credit institution for the group. If there is a default, the shortfall is made up by drawing on the security fund. Farmers are free then to apply for new credit as soon as the fund is replenished. The group can also evict the defaulting members.

Other pre-cooperative structures could be formulated using the same principles. Formation of input supplying agencies for the groups through which farmers could order their fertilize and other inputs by truckload is also possible. In Malawi, members of groups of farmers received a discount on price of fertilizer and could have it delivered to the location of their choice. This has been a successful scheme where ever it was established.(Ibid. p.280).

Recently in Somaliland, an initiative was taken to mobilize a group of venders to form a club. The club was structured such that their members would not exceed ten venders at a time. These venders sold small consumer goods ranging from spices, clothes, food items, and an assortment of fast-moving goods including dry-cell batteries, spools of thread, etc.

The group would then seek an-interest-free loan from the non-governmental organization that has this particular type of service in mind and which seeks out small enterprises. A loan is made to the group. Like in the Malawi farmers' pre-cooperative scheme, a trust17 fund is established from which any default may be met. The venders, however, are expected to avoid defaulting on payments of the loan.

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[17] Only 10% of the loan amount is deposited in the fund. This is paid at the time of receipt of the loan.

Otherwise, the organization would be justified to withdraw future loans. This implicitly would impose a collective punishment to the group as a whole which individual venders would not appreciate. In order to avoid this, the group normally ensures that none of its members risk this harsh measures.

If the club carries its pledge through and pays back the loan, the organization avails another opportunity and increases the size of the loan on condition that repayment conditions are upheld and that the venders expand and diversify the mix of products they sell. In so doing, the situation encourages the club members to increase their income generating capabilities and, implicitly, their quality of life.[18]

The financing institution, i.e., the non-governmental organization, is planning to expand its services to include farmers and other small-scale non-farming interest groups in the rural areas of the country. Emphasis, in this case, would be to provide these clients with chemical-biological and mechanical inputs, tools, and other essentials of the trade required by the small entrepreneurs.

C. Other *Qard Hassan* Benevolent Societies

Immediately after the establishment of the Organization of Islamic Conference, a number of institutions sprang out that dealt with different aspects of the Muslim society ranging from social, economic, banking, and finance. These institutional developments suggested the awakening of the socio-economic values inherent in the societies' perceptions and goals. However remarkable these developments might have been during this short period of time, it must be suggested that there still remains a long way to go in order to

[18] Almost all of these venders are women who are married or widowed and who have families to support. The scheme is very appealing to venders because of this advantage. Since loans are *Qard Hasan,* club members feel they have obligations to repay the loan amount at maturity. Thus, possibilities of default are narrowed.

precisely formulate the nature of objectives sought by these institutions so that significant breakthroughs can be made in defining the dynamics of methods and the modus operandi required to operationalize some of these values and objectives set by the society.

The Bangladesh Social Peace Foundation Experiments

The assumption underlying the formation of this non-profit, non-political, non-partisan, voluntary and humanitarian organization, according to the founder, is "to uplift the socio-economic conditions of the poor with a view to eliminating poverty". "The absolute poor ,must", in his words, "be placed at the center of a well-planned, integrated policy package that includes credit and its timely delivery, marketing assistance, formal or non-formal training to upgrade skills, coupled with essential moral and religious teachings". (See, Mannan, 1989, p. 112).

The objectives of the said Foundation are:

- To organize and implement income-earning and income spending activities that would assist a pre-selected target group of the poor in all walks of life, thereby humanizing both income and spending streams.

- To plan and organize income-earning activities in such a way that each person involved in the process gets a feeling of being able to see a purpose to life - economically rewarding, socially meaningful and spiritually satisfying.

- To plan and organize income-spending and non-spending diverse social works,so that each person experiences a sense of belonging and derives the necessary motivation to discharge his/her social responsibility on a continual basis.

- To awaken the social awareness and moral conscience of the individual and society and to undertake appropriate economic, social, educational and religious projects to achieve these objectives.

Some of the features of the Foundation include:

- To develop an alternative human face approach to credit and finance based on participation and sharing and integrate these secular, economic and religious activities.

- To implement projects targeting the absolute poor on priority basis through non-formal banking schemes.

- To involve the poor and beneficiaries of the program in the recycling process for mitigating the poverty of relatively less fortunate people.

- To foster the notion of sharing and participatory management designed to raise the level of self-respect and mutual reliance, rather than self-reliance likely to promote individualism.

- To develop required re-education to raise the level of the human qualities and potentialities of the participants of the program.

- To provide a clear sense of economic, social and moral purpose to each of the participants of the Foundation's program.

- To design and implement programs that convey life in its totality with a view to developing the Islamic notion of man, humanism and society.

In operationalizing these ideas, the Foundation has defined several areas of priority. Among these is the Productive *Qard Hassan* Scheme. This is a self-employment project which involves the absolute poor, the unemployed or under-employed people in the rural areas of Bangladesh who cannot provide any asset as collateral against any conventional loan. The Foundation started a small project at Upazilla Faridgonj, Chandpur district of Bangladesh in 1989 under which a group of twenty-five petty traders have been identified. Interest -free loans were advanced to them ranging from 300 Taka (US $ 10) to 1,500 Taka (US $ 46) to undertake various local, profitable businesses. These included garments, rice, dried fish, green coconut, chicken, fish, grocery, etc. these loans, which are advanced without any collateral, are to be repaid in easy installments after a month's business with an option to make a voluntary contribution to a "social fund", which may serve as a basis for introducing cooperative insurance to them. In exceptional cases the repayment of such a loan could be waived, but the recovery of the loan is needed either to sponsor another unemployed person or to support further expansion of the borrower's business.

A similar scheme is used to finance rope-making out of jute involving landless, semi-skilled labor, snack kiosks involving families, poultry schemes involving poor women, and other similar experiments.

The Foundation's small experiments are beyond the operation of conventional banks and cooperatives. The programs tend to be production, rather than collateral, oriented. They are expected to deal with the totality of the human situation and thereby give an operational meaning of economic activity as part of the code of life. Though this would require adequate supervision and intensive follow-up, it is likely to open new, profitable investment options for the rich in cottage, small land medium-scale industries on the basis of sharing. The program of mobilizing the public's participation at a grass-roots level through extending credit facilities without collateral is indeed a bold, alternative, socio-economic experiment.

D. Zakah Funds as a Means to Mobilize Working Capital for a Specific Target Purpose in Favor of a Particular Target Person(s) or Institutions

Islamic voluntary sector has been mobilized using such voluntary tools as *Zakah, Sadaqa, Waqf, etc.* to serve a particular objective. Where ever this have been done, emphasis has been to enhance the spirit of mutual reliance and social security so that communities can participate in the socio-economic development of the country in a planned manner.

For instance, the *Muhammadiyah,* a private sector, Islamic organization, established in Indonesia in 1912, has been able to mobilize Islamic voluntary sector resources, particularly in the areas of education, health, religion and social welfare. Mohammadiyah is managing "over 12,000 schools, 4,000 mosques, 12 hospitals, 120 maternity centers and poly-clinics, 271 mother and child care centers, 3 nursing academies, 13 nursing schools, 134 orphanages, 34 units of family welfare centers, and a number of small cooperatives throughout Indonesia" (See, Mannan, p. 123).

The experiment of the *Tabung Haji,* a savings and investment institution, of Malaysia is yet another blue-print of such voluntary sector institutions. Other cases which fit this classification can also be cited, e.g., the Awqaf Bank of Turkey, the *Zakah* House of Kuwait, the Zakah Fund Utilization for Poverty Program in Pakistan, etc.

2. CONTEMPORARY PRACTICES OF FINANCING AGRICULTURE

There are a number of `Islamic modes for financing agricultural enterprises. This paper will concentrate only on those modes that are deployed by Islamic Banks in most of their financing activities. The paper will highlight *Musharaka* and some of its variants, *Ijara, Istisna', Murabaha* including its derivatives, *Al-Salam,* and *Al-Istisna'.* Once these have been defined and the position of *Shari'ah* indicated, then

the study explores experiences acquired in applying these modes to the real-world conditions of agriculture.

A. **Islamic Modes of Financing Agriculture**

Agriculture works in an environment of its own. This sector is prone to many natural risks. Incidence of drought, floods, hail, earthquakes, mud slides and a multitude of other mishaps often need to be taken into the decision-making process. Financiers have been discouraged from investing in this sector because of presence of these risks. Ironically, these risks are not as common in other sectors, e.g. industry, trade, services, etc. as they are in agriculture. Notwithstanding these difficulties, financiers have not completely closed their doors to the sector's needs in general and financial requirements in particular.

Three major types of financing are discernible, i.e., short-term, medium term, and long-term financing. In the short-term option, finance is provided in the form of working capital to service machinery, equipment, fertilizers, seeds etc. subject to enterprise requirement. Repayment period is normally between 6 to 15 months. For the medium-term finance, funds are provided for improvement of farm structures, purchases of machinery, livestock and irrigation equipment. Repayment is within a period of two to three years. As for long-term finance, funds are made available for new operations and projects or for up-grading of existing ones. These funds are normally expected to cover most mechanical and irrigation equipment and installation of drainage and other salient features of the farm enterprise. Period of repayment of this type of investment is normally ten or so years.

The major types of operations discussed above, the modes of financing used to implement agricultural operations, and the choice of crop insurance policies adopted tend to reduce the adverse effect of many of the natural calamities and risks in agriculture. Implicitly, therefore, the sector can benefit from these Islamic financing techniques if the objective is to smooth out the effect of unexpected losses due to natural mishaps.

This section attempts to identify some of the modes that have been used to finance the needs of agriculture.

Musharaka Financing

Musharaka, by definition, is a legal contract that refers to the formation of a company or institution by way of partnership. From Fiqh point of view, *Musharaka* must satisfy several statutory conditions in order for this to be legally practicable. Following are a few of these conditions, viz.:

- The capital for *Musharaka* should either be based on cash contributions from the parties in the company or a combination of cash and real assets (e.g., land machinery, etc.) which should be imputed their market value to begin with,

- Method of distribution of profits among the parties in *Musharaka* financing must be defined in the contract,

- Losses will be distributed in proportion to the shares owned by the parties in company,

- The capital of the *Musharaka is* considered a trust in the hands of the manager of the company,

- *Musharaka is* a voluntary contract which could be terminated at any time provided this does not cause damage to any of the parties to the contract.

Muzara'a

Musharaka has several derivatives. *Muzara'a,* for instance, is a special kind of *Musharaka.* It is defined as a partnership in farming *(Al* ***Sharikah*** *fi Al Zira'a),* whereby one or more individuals enter into a contract to invest in an agricultural enterprise or operation. Output or

produce of the enterprise is shared between the partners in accordance with the agreement. stipulated in the contract.

In the view of the majority of the schools of Fiqh, *Muzara'a* is a legally acceptable legal contract suitable for financing agricultural operations[19]. *Muzara'a* can take several forms. For instance, the contract based on this arrangement can specify that land and other physical factors of production for the enterprise could come from one party while labor could be provided by the other party. Alternatively, only land can originate in one party while other factors, including labor, could come from the other party in the contract. Yet another alternative of *Muzara 'a* is that land and labor could come from one of the contracting parties, while all other factors of production may be provided by the other party in the contract.

Incidence of a three-party *Muzara 'a* partnership in which the first party provides land, the second provides a combination of required physical inputs, and the third provides labor is common in contemporary agriculture. Similarly, a financing arrangement based on *Muzara'a* can be initiated subject to joint partnership in the mobilization of land, other physical inputs and labor.

For *Muzara'a* contracts to be legally viable, several critical conditions must be spelled out. Among these, we list the following, viz.:

- Contracts must be binding between individuals or parties concerned.

[19] Strong support is derived from the Sunnah for this mode of finance, e.g., the manner in which the Prophet (PBUH) dealt with the people of Al Khayber. These were to cultivate the land provided they agreed to submit a portion of what was harvested from the land to the Prophet (PBUH). Evidence can readily be documented from other historical incidents in support of this position.

- The functions and obligations of each individual or party in the contract must be clearly and unambiguously defined.

- The location and characteristics of the land to be cultivated under *Muzara'a* must be clearly identified and submitted to the party that is to implement the operation.

- The production goal of the enterprise must be defined in terms of end products, i.e., crops or livestock to be grown.

- The period in which the *Muzara'a* contract is to be effective must be defined.

- Method of distribution of output must be stated clearly in the contract.(See, Abdalla, 1993).

Musaqah

Majority of the Fuqaha agree that *Musaqah is* an agreement between two individuals wherein one provides the orchards or trees owned and the other the labor and expertise for irrigation services and up keep. A specific or predetermined share of the enterprise output (e.g., a third or a half, etc.) will go to the provider of labor and expertise. This will be clearly posited in the contract. Even though this is the consensus of the majority of the Fuqaha, the position of the Maliki school is that *Musaqah* could also involve crop enterprises besides orchards/trees. (See, Bin Arafah, Ch.3, p.529)

Al Musharaka Al Mutanagisah

This is yet another variant of *Musharaka.* It is referred, among the English speakers, as the Diminishing *Musharaka.* Under this arrangement, an individual may enter into a contract with a bank to finance a package of physical inputs required by an agricultural

operation. Each partner's share of the profit from the enterprise will be specified in the contract. This agreement must also stipulate a certain pre-defined portion of the client's net income will be provided to the financier as payment of the principle financed by the latter. The bank's share of the equity will be progressively reduced through time until, at maturity, the asset financed reverts completely to the client, i.e., in this case the farmer. At this stage, the share of the finance in the asset vanishes to be owned in its integrity by the farmer. (See, Ahmad, p.41.)

Agricultural machinery and equipment have been financed by Islamic Banks through this mode. This variant has served as a component of the comprehensive *Musharaka.* Together with *Muzara 'a* and *Musaqah,* these derivatives explain why Islamic Banks tend to concentrate on comprehensive *Musharaka* relative to other modes in use.

Ijara (Leasing)

Ijara, in almost all schools of Fiqh (i.e., *Hanafi, Maliki, Shafi'i,* and *Hanbali), is* defined as a contract which permits ownership of the use rights of an asset. In this context, the asset and payments (made to acquire the use rights) must be *a priori* specified in the contract. Physical assets as well as labor can be leased under *Ijara.* Stated differently, leasing of assets and usufructuary rights is permissible. The lessee pays an agreed rental for use of assets. The lessee acquires the use rights not the assets themselves.

The leasing contract that has the approval of almost all the schools of *Fiqh* must bear all the conditions agreed upon and found acceptable by these different schools. The contract should be mutually agreeable, clear, and that the responsibilities and benefits of both parties should be definitely spelled out in the contract. The period in which an asset or use rights is leased must be stipulated in the agreement. The price against which these are leased should also be clearly defined in the contract. These conditions should all be

stipulated in the contract in order to avoid any element of uncertainty (i.e., *Gharar)* which may nullify the contract.

Murabaha Financing

Murabaha is a purchase and sale contract that has been used to satisfy a number of financing needs of the agricultural sector. *Murabaha* involves a transaction between a client and a bank such that the latter would facilitate the financing of a specific requirement of the former. In order for this to be viable, the client must first state the goods required in terms of its characteristics and quality specifications. The bank studies the feasibility of the specifications defined by the client and then informs the client the margin of profit the bank would like to make on the original price of the good. If these terms are acceptable to the client, then *a Murabaha* contract may be entered between the two parties.

In some banks' nomenclature, this is referred to as a Promise to Buy/Sell document rather than a contract. As such, this is not synonymous with a contract in the sense that a promise to buy or sell can not be enforced in the court of law as the case is with a contract. The client can, if he so desires, change his mind and not go through with the promise to buy or sell. The level of risk is therefore greater for the bank in the case of the promissory document to buy/sell than this would be with respect to a contract. Islam, nevertheless, encourages that promises made should be respected and Muslims do, in fact, take commitments of this sort very seriously. (See, Ahmad, pp. 34-36).

The bank purchases the required goods specified by the client and pays the seller directly. The contract between the client and the bank is signed, and the client undertakes to purchase these from the bank against a profit margin which has been agreed upon by the two parties. The client arranges to pay the original purchase price of the good together with the profit margin that bank seeks either in full or

on an installment basis. This is referred to in Arabic as *Ba'i Al Murabaha Lil Amir Bi al Shira.*[20]

There is another variant of *Murabaha* that is called *Ba'i Al Ajil* or *Ba'i Bi al Thaman Al Ajil* or , simply, *Ba'i al Mu'ajjal.* This is the deferred sale in which delivery of goods is made on the spot or immediately after the contract is signed between the bank and the client while payment of the price[21] is postponed till a latter date.

Ba'i Al Salam

The mechanics of *Ba'i Al Salam is* implicit in *Surah 1, Ayah* 283, and is supported by the *Sunnah* as narrated from Ibn Abbas that the Prophet (PBUH) had come to Madina when people there provided advance payments which were to be re-embarrassed after one, two or even three years had elapsed on the basis of future sale of grains. The Prophet (PBUH) is reported to have said, "He who advances payment (subject to future sale of grains) must do so on the basis of a definite weight and a pre-determined period of time". (See, Abdalla, p.6**).**[22]

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[20] There are several versions of *Murabaha* depending on how payment and prices are negotiated between the bank and the client. For instance, the *Ba'i Al Tawliyah* refers to transaction based on cost price for goods to the bank without charging profits. *Ba'i Al Wadhi'ah* is a contract that is based on the price of the good assessed at less than cost price paid by the bank. The latter is, arithmetically, lower than *Ba'l Al Tawliyah* by the amount of discount given, for one reason or the other, to the client, by the bank. (See, Faisal Islamic Bank Memograph**).**

[21] I have noted a common error in the specification of price in this and other similar definitions. The concept of price theoretically denotes the monetary charge for the commodity sold. What is meant in this statement (at least from the seller's perspective) is the cost of the commodity (C_c) which, by definition is the product of the price of the commodity (say P_c) and the quantity of the commodity sold (say Q,), or, simply, C,, = P_c. Q,.

[22] This is author's translation.

Al Salam is a sale-based contract. It is usually interpreted as being the opposite of the *al Ba'i Al Ajil* or *Mu'ajjal.* In *Al Salam,* payment is made in advance while delivery of the good may be postponed. This advance payment is sometimes called the *Ras mal al Salam.* The rationale for *Al Salam is* the need of producers of agricultural and small-scale enterprises or sellers for funds - i.e., working capital for the enterprise or requisites for personal expenditures.

Several conditions are expected to be present in the *Salam* sale contract. Among these we may point out the following, viz.:

- That payment must be immediate and on the spot. A condition contrary this statement can not be enforced on the seller unless it is clearly stipulated in the contract. Even under the latter condition, payment is made when the seller submits the good to the buyer.

- That delivery of goods is postponed.

- That the good to be delivered is specific and can clearly be defined physically and quantitatively, i.e., kilograms of wheat, etc.

Al Istisna'

Al Istisna' refers to a request or an order placed with a manufacturer to make an equipment, tools of trade, or anything of utility. The base material will be specified in the request made to the manufacturer and a price will be quoted in exchange for services rendered. This is the general form that this mode takes.

The *Hanafi* school of *Fiqh* supports this definition by resorting to the *Sunnah.* There are two commonly cited historical antecedents in this regard that are used to support this position. The Prophet (PBUH) is reported to have placed an order (a) to a gold smith for

a ring, and (b) for the manufacture of a Manbar (i.e., a pulpit). (See, Dunya, p.28).

Justification for the concept of *Istisna' is* also made because of its utility. That is, people need tools of trade in order to make a living or to secure other necessary structures upon which their livelihood may depend. In order for an individual to make a living, these requisites will have to be manufactured for them by the industry or the manufacturer. A process is unleashed that would collate a system of orders (i.e., demand for goods) and suppliers of these goods and services. *Istisna',* therefore, is a skill-enhancing, industry-oriented manufacturing mode through which the tools of trade and other technology-intensive inputs can be made accessible to the entrepreneur.

The *Istisna'* contract is expected to !contain the following major conditions, viz.:

- The terms of the contract must be clearly stipulated such that it is unambiguous in terms of place, nature, type and specification of product to be made (or manufactured) and in terms of quantities demanded.

- The manufacturing order be based on contemporary social milieu of that society under whose culture the contract subsumes.[23]

- The *Istisna'* contract need not have a specific time period defined under which it should mature. This implies that the contract can be open-ended and still be acceptable from *Hanafi* point of view. Or, it can have

[23] *lstisna'* is not acceptable outside the goods normally manufactured under the cultural setting that is specific to that society at that particular place and time. However, this may be relaxed if the conditions of *Al Salam* can be met in implementing the *Istisna'* contract. '(See Dunya, p.32).

maturity date clearly posited without this having any adverse effect on the legality of the contract.[24]

The *Maliki* school does not see *Istisna'* as a special contract or an independent legal preamble as do the *Hanafis.* Rather, they look onto this as a sale-based contract among many in this group which can be interpreted and implemented subject to the *Salam* conditions and specifications. Similarly, the *Shafi'* and the *Hanbali* schools consider that *Istisna'* can be implemented within the context of *Al Salam* contract without having to treat it independently and/or exclusively thereon. (See, Dunya, p. 37).

B. Applications in Agriculture

Musharaka financing, including all its variants, have been extensively used in agriculture in order to provide farmers with the essential factors of production. In particular, agricultural machinery and equipment have been financed through Diminishing *Musharaka. Muzara'a, Musaqah* are used to finance labor, expertise and management components of the production cycle. The working capital and other inputs such as fertilizers, seeds, etc. are provided by the financier through comprehensive *Musharaka* arrangements.

A package including plowing and irrigation services, and extension have been provided to farmers through comprehensive *Musharaka* financing. Also marketing, transportation, and storage of the farm output. In few instances, this comprehensive *Musharaka* covers possibilities of crop insurance, complementing thus the services rendered to the farmer from land preparation to disposal of crops. (See, Khaleefa).

Some Islamic banks own a pool of machinery, equipment and expertise in extension services. These banks lease water drilling rigs,

[24] However, *Istisna'* contracts with maturity dates less than one month are not permissible according to the Hanafis. (See, Dunya, p.33).

tractors, combine harvesters on the basis of hourly rentals. These are implemented through *Ijara* contracts. *Ijara* has traditionally also been used by Islamic banks to finance acquisition of real assets in agriculture.

Murabaha, especially *Bai' Al Murabaha lil Amir Bi Al Shira,* has proven useful in financing the chemical, biological and mechanical inputs that are essential for modern agriculture. *Bai' al Salam,* from the farmer's perspective, have been used to finance sale of crops in agriculture. In so far as farmers get the cash which they need to plow back into the crop cycle, farmers have shown preference for the *Salam* contract at the beginning of the crop season. Delivery under *Salam is* negotiated for a latter date but payment is made at the time of the contract.

Bai' Al Ajil from the farmer's point of view does not make much sense simply because they do not wish to postpone payment for outputs they deliver on the spot. However, in the case of delivery of inputs by sellers to farmers, *Bai' Al Ajil* may, in the long-run, prove to be a practicable mode of finance. The advantage of merchants delivering inputs in advance and simultaneously delaying payment (from the vantage point of the farmer) would appear to be a lucrative proposition that should be studied at close range in the future.

Istisna' is unique in that it is predisposed to cater for the technology-intensive input needs of the farm enterprise. We shall return to this subject in the last section of the paper. Suffice it to say that the potential for this mode to fill in the technological gap in the agriculture sector is great. Unfortunately, not much use has hitherto been put to this very bright financing alternative in contemporary agriculture.

It is not the goal of this paper to discuss the details of the modes hitherto described. It would be useful, however, to highlight some of the problems encountered in implementing some of these contracts in agriculture. Below, I have narrated practical difficulties encountered in the implementation of *Ba'i Al Salam* and have indicated what

remedies had been found appropriate to deal with these real-world problems. Even though this is a Sudanese experience,[25] I would hope that lessons can be drawn and solutions replicated for those Muslim countries who use this mode of finance in their agriculture.

Ba'i Al Salam was instituted by Islamic banks in the Sudan so as to provide farmers with short-term working capital requirements. The objective at the time was to resolve the liquidity crises that was confronting agriculture enterprises and, also, to find a workable alternative for remunerating services rendered to these enterprises. The banks in the country then began committing substantial funds during the crop seasons 1991/92 and 1992/93 in order to service the needs of the sector.

In the process, it was discovered that there were inherent difficulties in the mode as it was practiced that had created substantial reservations from the point of view of the clients as well as the professional staff in the banks who were responsible in implementing the program. Some of these were due to the *Shari'ah* interpretation of the mode, while others were on purely technical problems that dealt with the implementation of the mode to the real-world conditions of agriculture in the Sudan.

There are difficulties of differentiating between *Ba'i Al Salam* as it was applied in the field and the notorious, traditional, informal lending arrangement known as *Al Shail.* This method as it is practiced by traders in rural Sudan, is unfair, exploitative and anti-developmental. Traders exploit the low prices which crops seek during harvest season only to leave farmers incur losses. The same crops would be sold later on by the same traders at higher prices extracting, wherever possible, considerable profit margins in the

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25 These experiences (especially as regards problems encountered in the application of Shail) are exerted from the papers presented in the IRTI/IDB Seminar entitled "Islamic Financing Techniques" held in Khartoum between 25-27 Rajab, 1413H (20 January 1993).

process. *Ba'i Al-Salam,* however, is meant to stabilize producer prices received so that farmers could get better returns for crops marketed. In this sense, and contrary to *Shall* practices, *Salam is* a positive and development-oriented sale-based mode of finance.

In the *Shail* arrangement, rural money lenders do not pay farmers fairly. They do not remunerate them on the basis of crop expenditure outlays which farmers incur in the production cycle. Rather, they oblige the farmers to purchase goods from them at higher prices. Cash payments are thus replaced with barter of crops with physical goods or other items that may be totally unsuitable to the needs of the farmers. Farmers, in most cases, do not require these goods. They have no choice but to accept these and to re-sell them for whatever price they could get. Since *Ba'i Salam* includes barter of physical goods, it can offer farmers such goods (when and if) they need them, but would not insist that farmers take any such goods as repayment. If requested, it gives them cash payments which are commensurate with expected price and crop harvests at the end of the season.

In the *Shail* arrangement, the price for the crop traded is determined by the lender/trader at the time of sale. This price is not negotiable and is naturally, therefore, far removed from market prices quoted elsewhere. Evidently, there is an unfair pricing element instituted against the farmer especially in the event that the market price is higher than that offered by the lender/trader at the time of delivery of the crop. In the *Ba'i Salam,* any price differential between the time when the contract is signed and the date of delivery of the crop would be adjusted. That is, in the event that the prevailing market price. is higher than the price reflected in the contract, farmers would be remunerated on the basis of the former, i.e., prevailing market price. This critical adjustment of seasonal price variations[26] is an important attribute of the *Shari'ah* sanctioned *Ba'i Al Salam.*

[26] This element in the *Salam* mode of sale was implemented in the field during the crop season 1991/92 in the Sudan.

In summary, if the farmer under the *Shail* fails to fulfill his obligation to the lender/ trader, because of (say) failure of the crop, the farmer would either repay the amount borrowed or the debt would be re-scheduled with more oppressive terms imposed, e.g., he would be expected to increase the quantity of crop that the farmer should deliver. In the case of *Ba'i Al- Salam,* the bank follows up the farmer's performance at different stages of the production cycle. In so doing, the bank would naturally be aware of the status of the farmer. The bank would also be acquainted with the causes of failure and possibilities of default. If the bank is convinced that failure to honor his obligations is due to external factors, then the bank would delay delivery of crops and no penalty, either in the form of higher charges or additional crops, would be imposed on the farmer. The bank provides financial assistance to the farmer to begin a new round of the crop cycle.

Banks have developed specific policies with respect to *Ba'i Salam* in order to ensure proper use of finance provided by them, viz.:

- The bank enters contracts with only those farmers who satisfy credit conditions specified by the bank's regulations.

- In financing farmers' operations contracts are established to cater for items which require liquidity. Other items are financed through *Murabaha* (mark-up) mode.

- In order to direct funds to the important agricultural activities and to provide funds on installment basis, banks have developed separate *Ba'i Al Salam* contracts for each stage and are willing to secure funds sufficient to implement this stage.

- The farmer who violates these regulations is disqualified from receiving funds from the bank. (See, El Sayid, pp. 3-4).

3. COMPENSATORY SCENARIOS OF FINANCING FUNCTIONAL ACTIVITIES AND/OR OPERATIONS IN AGRICULTURE

In section 2 of the paper, the production-marketing process was briefly discussed. The scope of activities, resource requirements, production and inter-sector symbiosis was highlighted. In this context, the crop enterprise and the production cycle was defined in terms of factor requirements and in the light of activities presumed pertinent at any particular stage of the cycle. At the end of the section, a composite production relations was defined that explained the complete cycle in terms of resource mix and/or input requirements.

This section concentrates on methods that may be used to finance the functional activities and/or operations subsumed under the crop cycle representation.

Equation 1, in the preceding section (see page 14), defined the crop enterprise (Y_{cr}) in terms of land (L_a), labor (L_b), and the composite capital requirement (K^*). The financial support system provided through (K^*) may generally be conceived as being composed of the working capital and investment capital. These two funding streams should be sufficient to meet the financial needs of the enterprise including the constituent components of the composite (K^*).

Given this representation, the global function for the enterprise output of crop ($Y_{cr}r$) could be broken down into two major categories, viz.:

The autarkic and/or subsistent production, and

An open, market-oriented production relations in which financing of critical factors is a major requirement.

Under the autarkic and/or self-sufficient classification, the crop enterprise (Y_{cr}) is either dependent on land (L_n) and labor (L_b) inputs only, or on the totality of factors defined in the Equation 1, including the composite K. In the former, i.e. the autarkic case, the enterprise

can be characterized as being a subsistent production since locally endowed and indigenous labor is combined with land to produce the crop enterprise. Financing of the capital component is not deemed critical under this representation. In the case of the latter, however, the crop enterprise includes the composite K', or a part thereof, which is financed by the farmer from his own resources without having to resort to a second party contributions. This is defined in the context of this study as a self-sufficiency condition in terms of land, labor and capital (composite or otherwise). These two versions are no concern to us since they assume autarkic, closed market conditions wherein K' is not subject to financing because it is not required in the case of the former, and is satisfied internally by the farmer in the case of the latter.

The open, market-oriented production enterprise differs from the options suggested above in that all the operations required to implement the production cycle are subject to financing from outside the farm. Factor and product markets determine the scope and mix of resources used in the enterprise, and therefore the scale in which outputs are produced and marketed. It is this option that is of concern to the study and to which I shall devote the rest of space.

An open, market-oriented crop production enterprise which has the objective of producing for the market can be chosen from either of the following scenarios in order to secure the funds needed for salient operations, viz.:

Scenario No. 1: The enterprise seeks finance for a slightly desegregated K'. Under this condition, the case of working capital (K_f) and expertise or human capital (K_h) will be emphasized. This choice is based on the contemporary practices of Islamic Banks in financing agricultural operations.

Scenario No. 2: The enterprise seeks finance for the composite K". This scenario assumes relaxation in the nature and scope of fund that is subject to global enterprise needs. Only lump-sum provisions can, however, be made to the enterprise as per, for

instance, crop or livestock enterprise needs. This version too is practiced by some Islamic banks even though not as widely as the case is with working capital.

Scenario No. 3: The enterprise would seek finance for a highly desegregated K. That is, funding would be sought to operationalize activity levels in the crop enterprise. Constituent parts of the composite capital required for the enterprise would be subject to financing such a proposition in which funding is sought to meet the cost of all the operational activities is novel idea that requires further attention.

These scenarios are discussed below in greater details. An inter-scenario companion and analysis of advantages and draw-backs are also highlighted.

Scenario No. 1

Equation 1 can either be considered from the vantage point of a self-sufficient farmer wherein the financial requirements of the enterprise can be satisfied solely by one entrepreneur, or, alternatively, from four independent sources each one of whom. through distinct from the other, would want to pool their funds.

The case for a self-sufficient farmer has already been ruled out as being of no concern for the purposes of this study. For the latter, it would appear that it is possible for the four autonomous sources of factors of production to get together in order to pool their resources so as to satisfy the needs of the crop enterprise. In other words, a four-way partnership would be established since factor endowments simultaneously reside in different individuals or sources. By combining these in a partnership arrangement, land (Ln), labor (L_b), working capital (K_f) and management (K_f) can be jointly mobilized to satisfy the operational requirement of the enterprise. These two options (i.e. self sufficiency and 4-way partnership) define the extreme end positions of the configuration that is possible to be anticipated from this particular scenario.

Between these two extremes, however, we have a number of different combinations which reflect alternative variants and mix of resources. Land, labor, working capital, and management can be combined to form :

(A) 2-party partnership in at least 3 distinct ways

- $(L_n + L_b + K_r) + K_h$ ..... (2)
- $(L_n + L_b + K_h) + K_f$ ..... (3)
- $(L_n + L_b) + (K_h + K_f)$ ..... (4)

Equation 2 assumes that land, labor and the working capital reside with the farmer. In order for him to impart on the crop enterprise, he would need the expertise financed by the Bank. In reality, this has been resolved by entering into *a Muzara'a* or *Musaqah* arrangements with a client who has the required technical expertise to pool into the enterprise. Experts can also be acquired without having to share the output ($Y_c r$) of the enterprise in which case he will have to be remunerated for his contribution in cash.

Equation 3 suggests a situation in which land, labor and expertise all reside within the farmer. Under this condition, the farmer seeks financing for the working capital (K_f). This is normally resolved through *Musharaka* variants with Islamic banks so that farmers will get the finance to pay for the expenditure outlays subsumed in the production cycle.

In Equation 4, the farmer has only land and labor inputs but lacks the capital components contained in K_f and K_f Islamic banks involved in agriculture consider this to be a classical scenario and a representation of the real-world conditions of agriculture in the lesser developed countries. Several financing modes are readily available in order to address this shortfall. The 2-party partnership arrangement under which this scenario falls, reflects how farmers may resolve this gap in the mix of resources. Depending on the nature and scope of the K_r and K_b resource mix in the enterprise, Islamic banks can Taylor-make financing through the use of a single mode or a

combination of modes within *Musharaka, Mudharaba, Murabaha* or *Ijara.*

(B) 3-party partnership in at least five ways

- $(L_n + L_h) + K_f + K_J$ .....(5)
  $(L_n + K_h) + L_b + K_f$ .....(6)
- $(L_n + K_f) + L_b + K_h$ .....(7)
- $(L_b + K_f) + L_n + K_J$ .....(8)

Equation 5 suggests a 3-way endowment of factors of production. Labor and land reside with the farmer. The working capital resides with another individual. The expertise resides with yet another source. Under this circumstance, implementation of the enterprise will require pooling together of the factors under some sort of arrangement that would eventually reward the contribution of each partner. Islamic banks have often been known to provide a package of inputs that include the expertise. If this is the case, then both K_f and K_b can be provided together. Otherwise, K_h will have to be incorporated into the *Musharaka* arrangement and labor cum land , K_f and K_J will have to be remunerated individually according to the three-party partnership contract. (See, Khaleefa, p. 11).

Equation 6 assumes that the farmer is endowed with land and has sufficient management and skill acumen (K_b). However, he seeks finance to meet the cost of labor and the working capital in order for him to implement the production cycle. The farmer will have to either hire the labor required or incorporate this factor into the enterprise activities through *Muzara'a* or *Musaqah.* In so doing, the inclusion of the second party will be substantiated. The third party would provide the working capital (Kr).

Equation 7 stipulates that the farmer is capable to furnish the working capital in addition to land. He, however, has neither the labor needed to work the land nor the expertise to work the farm. To resolve this gap. a three-party partnership can be arranged to complete the mix of resources needed to effect the production cycle.

Islamic banks have done this sort of arrangement through comprehensive *Musharaka.*

Equations 8 is unique in the sense that land is distinctly what the owner has to offer[27]. The landlord has neither the working capital nor the required labor nor the expertise to run the enterprise. This may not be an unrealistic proposition if one takes time to rationalize it. I would rather consider it a very candid expression of the reality of the poor and physically feable land owners in many parts of our rural sector. Islamic banks have generally shied away from financing this sort of an option because, in their perception, this contravenes the assumption that the farmer should, by definition, have the combined land-labor potentials for him to enter into a substantive agreement with a financier. If this is the only reason for not financing this mix of resources, then perhaps the alternative that considers the same functional relations from the perspective of a landlord who seeks to find a partner endowed with labor and expertise in addition to a financier (who will be willing to subscribe the working capital as suggested in equation 7) would be more realistic. Still another alternative would be for the farmer to pool his land with others who have (i) labor and working capital , and (ii) the expertise, as implied in equation 8[28].

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[27] It is difficult to call the owner of land, under such a circumstance, a farmer. He could very well be a landlord residing in the city. This poses a conceptual problem which I do not wish to delve into lest it distracts me from the objective of this study.

[28] A 3-party *Mudaraba* can be arranged using either *Muzara'a, Musaqah* or *Mugharasah* in such a way that this involves the provider of capital, the expert (eg. an agronomist or an agricultural engineer), and a third party (say the government). The role of the third party would be to guarantee the user of capital to the bank (i.e. the provider of capital). Guaranteeing losses can serve as motivational or incentive tool in favor of all the parties to the contract. However, the efficiency criteria and/or problems of this policy should be heeded.

Scenario No. 2

In this scenario, the objective would be to find a financier who is willing and able to consider financing the composite K. As already defined in Section 2.2(C), K incorporates the totality of capital-based factors contained in the production function expressed in Equation1.[29]

Implied in this composite mix is the assumption that rural small enterprises would find this option more convenient for three important reasons, viz. (a) that all their needs can be covered under a single package which would subsequently resolve the problem of finding different partners for each component of capital in the equation, (b) that there is an implicit relaxation in both the nature and the scope of financing that can be made available to the enterprise relative to conditions in Scenario No.1, and (c) that the composite capital (K) can be expertly tailor-made to fit the financial, technological, biological,, management, marketing and other service requirements of the enterprise.

This Scenario has the potential of bridging the gap in the capital-intensive factors stipulated in the production relations which confront the producers. Any arrangement entered into with the farmers through a contract that specifies financing of these factors would implicitly serve as guarantee of better yields or, at least, a higher expectation of improved output performance. If this is the case, then the objective of financing the crop enterprise through Scenario No. 2, should be seriously examined as a viable compensatory alternative.

It is assumed, structurally, that the land and labor factors reside with the farmer. This avoids the complexity of having to entertain the

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[29] That is, $K^{=}(Kc_{+} K_b + K_h + K_m + K_r + Kf)$. Elements within the brackets refer to chemical, biological, management, mechanical, marketing services (including crop insurance) and the working capital respectively.

difficult job of combining these two inputs according to their owners who, in reality, may be two or more independent, non-over lapping and exclusive entities. Only a 2-party partnership would therefore be necessary, viz., one which provides the combined land-labor inputs and the other the composite K.[30]

Scenario No. 3

The crop cycle is the premises of this scenario. In Fig 1., the crop enterprise, activities in the production cycle and resources required are defined. Six major activities are identified in the cycle, viz., land preparation, installation of irrigation and drainage systems, planting, pre-harvest management and husbandry, harvest and, finally, post harvest activities.

This detailed breakdown is given so as to posit some important developments in the intricacies of contemporary agriculture. Also to suggest the symbiosis with developments that are taking place in other supporting sectors. In addition, contemporary economics, financial and banking perceptions suggest that reforms are necessary and that this sector must shed off the old adages and misconceptions of the past. The privatization of agriculture, the simplification of the choirs characteristic in the profession, and provision of necessary technical and financial inputs, have all proven to be indispensable. These must be easily accessible to farmers in the lesser developed countries so that they can be helped to undergo the change implicit in the crop production cycle.

[30] I was recently informed that a variant of this scenario was practiced in the Sudan before November, 1990. Under this policy, the Central Bank of the Sudan provided finance for agricultural schemes through the 8 public Agricultural Corporations that were in existence at the time, e.g. The Gezira, Rahad, etc. These Corporations then financed enterprises in their localities on the basis of crop package requirements. This was a lump-sum amount capital that would cover all the capital requirements of each crop grown. This policy has since been scrapped and replaced with something else. I shall return to this subject shortly in the context of Scenario 3, which is discussed in the following pages.

This scenario is also based on the premise that if enterprises in agriculture are given the incentive to adopt new technologies by way of, say, the desegregated components of the composite K and subject to implementation of recommended activity levels at maturity, then these enterprises would most likely adopt these new infusions. In so doing, the objective of modernization of agriculture would be achieved in the long-run. This is yet another alternative that could bridge the gaps long ignored by existing modes of financing agriculture.

The implication of this argument is that the output of food and fiber by the enterprise would most likely increase, thereby enhancing the contribution of the sector to the economy as a whole. This is likely to make the role of the sector more substantive and consistently stable-in the long way.

Critically, instead of providing the farmer with only the working capital and expertise as is defined in Scenario No. 1., or the composite K* as in Scenario No. 2., what this option postulates is that financing of the enterprise would be made depending on what comprehensive plan is to be implemented at the time when farmers apply for funds.[31]

In the crop enterprise, activities normally have strong temporal connotations. That is, land preparation takes place at a specific time in the crop cycle. Planting can not be scheduled at whim. Rather,

[31] It has come to my notice that the Government of Sudan has adopted the policy to privatize agriculture under which case the Commercial Banks would play the role of financing sector needs. Commercial banks are expected to create a portfolio the funds of which would be used to meet specific activities within a given enterprise. This commercial Bank (common) portfolio is a syndicated fund which is created by the Central Bank. Subscription of every bank in the portfolio is in the amount of 50% of its credit ceiling which is earmarked to it by the Central Bank. This is a statutory ruling specified by the law. I do not have information beyond this casual observation which was relayed to me by a colleague. The ideas discussed in this paper were developed independent of the practice adopted in the Sudan. It would be revealing to find out more about this Sudanese experience in the near future.

there is a technical and agronomically defined period in which this activity can most suitably be implemented. Harvesting is equally temporal and has a specific periodicity which is closely associated with the crop in question and its biological-agronomic characteristics. These unique properties should be incorporated and carried over into the decision-making stage by financiers so as to determine the timing, nature and scope of financing required. Activity levels within the production cycle can serve to define these maturity dates in which the stream of funding becomes mature, and in so doing establish the linkage in between the activity and the provision of the fund required to institute it.

Taking this into account, Table 1. summarizes and associates each of the six major activities in the crop cycle with the nature and specification of resources required, viz.:

Table 1

CROP CYCLE - ENTERPRISE ACTIVITIES AND RESOURCE REQUIREMENTS

SL#	Activity	Resource Requirement
1.	Land Preparation	L_b, K_f, K_h, K_m
2.	Irrigation's Drainage	L_b K_f, K_b, K_m
3.	Planting/Cultivation	L_b, K_b, K_c, K_f, K_h, K_m
4.	Pre-Harvest	L_b, K_c, K_f, K_m
5.	Harvest	L_b, K_f, K_m, K_r
6.	Post-Harvest	L_b, K_f, K_m, K_r

The cycle, in essence, would be financed in stages. Stage one would involve securing funds for land preparation. This would cover capital requisites listed under this activity in Table 1. The farmer would be expected to apply for sufficient funds to cover the cost earmarked for this stage only. Once the fund is received and operations in this stage implemented, the second stage would become

due. Upon completion of the second stage, the third stage would become mature, and so on until all the stages in the cycle have been exhausted. Bills for activities would be accumulated a) for each stage or b) for all the stages until the production cycle is completed. Settlement of the crop enterprise accounts, however, would .be made immediately after the cycle has been accomplished and the crop marketed. Revenues from sale of the crop will be used to settle these bills and profits (if any) will be distributed among the partners according to the contract specified by the relevant modes adopted in each stage.

4. INTER-SCENARIO COMPARISON AND IMPLICATIONS FOR RESOURCE MOBILIZATION

Each of the Scenarios presented above implies a unique potential for resource mobilization. In the case of Scenario 1, emphasis is on procuring two of the most commonly sought inputs, i.e., working capital and expertise. Even though the working capital in this context is defined subject to enterprise requirement, this is expected neither to be as comprehensive as we shall see in the case of financing the composite K nor as exhaustive as the case is with financing activities in the production cycle. This limitation not withstanding, Scenario 1 is admittedly an improvement of the autarkic and/or subsistence condition in which only land and labor are employed to produce the crop. The advantage of this Scenario, relative to autarcky, therefore, is that opportunities are presented to a multitude of small scale enterprises who would otherwise find it difficult to procure the working capital and expertise required by the enterprise. The fact that this variant has already been operationalized under different names, in and of itself, is an advantage that should be reckoned with.

Financing agriculture through this scenario is not new to Islamic banks. For instance, the Sudanese Islamic Bank, among others, enters into a 3-party *Musharaka* with farmers under which the bank provides the working capital and the expertise. The working capital committed to an enterprise by a financier could be as specific as *Muzara'a*

requirement or this could be a multiple combination of modes as the so-called Comprehensive *Musharaka.* Each party is then remunerated according to the contribution it makes to the enterprise. The farmer is rewarded for his labor, the expert for his management and skill contributions and the bank for the working capital. Crop production, poultry, dairy-cow enterprises and a multitude of small-scale non-farm activities, which are closely associated with the crop/livestock enterprises, have benefitted from this financing variant.

Scenario No. 2 is a more advanced version of the preceding option. We had identified what the composite K' entails. This is the essence of departure from the situation defined in Scenario 1. In accepting this scenario, all the parties would be well informed of the total requirement of the production cycle in terms of capital and labor. On the basis of this full information, those who are willing to enter into a partnership would be aware of the mix and scope of contributions to be pooled into the aggregate program. Once this is defined, the distribution of shares and/or contributions to be made into the capital requirement of the enterprise can be clearly posited. Emphasis, in any case, would be (i) to make all the components of capital available, (ii) to know who, among the parties involved, is contributing what components of the composite package and (iii) how profits (if any) would be distributed.

The comprehensive nature of the composite K' is a critical landmark of this variant. Because of the superiority of the technological-biological-chemical inputs subsumed under this arrangement, the enterprise would be prudent to seek financing under Scenario No. 2 rather than under Scenario No.1.

Operationally, an added advantage is that this option does not contravene those procedural norms and methods of financing which are currently being practiced under Scenario 1 by Islamic banks. The difference between the two scenarios is only one of magnitude and content of capital covered under each option. In so far as the package in Scenario 2 includes what is perceived, in contemporary modern agriculture, to be capital-intensive superior factors of production, the

probability of small enterprises accepting this new technology is improved. This is, by definition, equivalent to enhancing, the farmer's incentives to adopt the package. A policy based on the composite package, therefore, appears to be more a superior vehicle through which traditional agriculture can be changed for the better.

Scenario 3 is a more advanced refinement of the composite K version. Instead of financing the basket of input requirements for a crop or a livestock enterprise, this option takes the stage-wise breakdown of the enterprise activities into consideration.

The production cycle is taken as the terms of reference for each crop or livestock enterprise. From this schedule, the scope of capital to be financed and the date at which this will become mature can be exactly identified. Only funds required by each stage or activity at maturity will be provided. This systematic arrangement of maturity dates will ensure that funds earmarked for each activity go to satisfy precisely those functions in that activity. Fungibility is therefore reduced and the likelihood of strict adherence to the agronomic plan and procedures , in the case of crops, ensured.

In all, six stages will have to be financed sequentially for the crop enterprise. For livestock enterprises, this may be smaller depending on at what stage animals are required to be sold. The supervisory activities are essential so as to maintain a good level of enterprise control and ensure, in all stages, that the most efficient and cost-effective management procedures are adopted.

In each stage of the crop cycle, requirements are identified in terms of labor, capital and support services. Capital is desegregated according to the specific needs of the stage of the cycle in question. For instance, in the planting stage, labor would be combined with different forms of capital viz., biological, chemical, mechanical, human and finance.(See, Table 1). Other stages of the cycle would be dealt with in the same way.

The uniqueness of this option is that each stage or activity would be closely studied and scrutinized by experts (agronomists, financiers, accountants, etc.) in order to define, as precisely as possible, the mix of resources that should go into this stage or activity. This would facilitate a reliable, highly scientific and financially accurate estimates of each requirement by stages. Compared to Scenario No. 2, in which a lump-sum finance (i.e., composite K') is provided, Scenario No.3 presents a refined alternative that can satisfy the requirements of the agricultural enterprise. Under this circumstances, the enterprise can best be characterized as being technology-intensive, method-based production process that is a far cry from the petty and tradition-based agriculture of the past. Given the built-in control mechanism in this latter option, the enterprise is likely to generate higher yields and in so doing improve the income generating potentials of the rural families participating in the enterprise partnership.

In summary, the problem of limited financing in agriculture is not because of absence of financing techniques or modes but rather (i) failure to unleash the full potential of the modes so that these can cover the needs of the borrower, and (ii) failure to capture the composite and/or combinatorial capabilities of these modes so that the range of activities subsumed in the production cycle including, in this particular case, the crop insurance *(Takaful),* can be achieved.

The problem of limited exposure of the sector to financing may be solved through the compensatory scenarios discussed in the preceding section. These options are meant to relax and expand the range of activities that are financed through existing modes. *Shari'ah* laws will not be contravened since only the range of physical inputs (i.e., the chemical, biological and mechanical, etc.) and human expertise are expanded. In effect, neither the legal premises nor the spirit embodied in these modes will be altered. The compensation suggested implies institutionalization of the realities of the sector which have not previously been captured in the initial design and applications of these modes. By derivation, therefore, financing practices will, in the long-run, be upgraded because • the composite financing requirement of the sector will be emphasized as opposed to the partial, non-integrative approach to financing of the sector needs now practiced.

V

PRACTICALITY OF FINANCING AGRICULTURE THROUGH ISLAMIC INSTRUMENTS

I have indicated in the preceding sections that the potential for informal financing, particularly as this is applied to agriculture, should not be ignored when mobilizing funds. It must be emphasized here ,that this source of finance can not be expected to meet a large portion of the capital required by the sector. However, because there is the advantage of accommodating people's participation in decision-making, this option needs to be given the attention it deserves.

I have also indicated that there is a dire need to help enterprises transit the autarkic condition now prevailing in rural agriculture. This, I had argued, would require mobilization of the composite K' from sources outside the sector, i.e., financial and capital markets in the economy wherever possible.

This section of the study explores how one may mobilize the composite capital using whatever facilities there are in place. This gesture is based on the argument that the more complex K' is, the more difficult it would be for the individual entrepreneur (in this case the farmer) to finance his enterprise operations from either his own resources or from sources in the informal financing sector. The magnitude of funds involved would simply be too large to be met from individual or community sources and that the risks inherent in such an undertaking would be too high for the farmer operator to bear it alone.

Taking these into account, the option of seeking to finance K' from the capital market becomes all the more indispensable. This would necessitate investment in agricultural programs or enterprises to become more flexible so that this would appeal to the investors from both the public as well as the private sectors. This can be achieved through the capital market if there are such institutions in place, or,

alternatively, through the sponsorship of appropriate facilities that could be assigned the functions of implementing these duties in the absence of the former. Participation of investors who are willing and able to mobilize resources for agricultural programs through these markets in whatever proportion they wish to pool, would appear to be the only way out of this financial bottleneck that the sector confronts.

Having posited these arguments, it is important that the reality in the economies of the lesser developed countries also be highlighted. The fact that development of a country's economy depends on, among other things, the stock of resources and the skills endowed in its work force can not be ignored. The ability to save and mobilize resources for investment, in turn, depends on the strength of the country's capital market which, in itself, has close linkages with its ability to fashion or design financial instruments that are suitable for mobilizing funds for the economy's target programs and projects.

In the absence of a strong resource base from which the saving and investment plan could be built, many countries have found themselves hamstrung to get out of this vicious circle. This is a true reflection of the less developed Muslim countries which do not have the resources they need to implement their development programs and projects. Implicitly, their budgetary requisites are never met and plans based on these become untenable to say the least. Under such circumstances, possibilities of developing financial markets are remote at best. Consequently, financial instruments, as tools of resource mobilization, become relegated to future generations when and if economic conditions in these countries warrant their establishment and implementation.

While the development of the capital market may be a policy of the future, certain functional responsibilities and roles of this institution will have to be assumed by the contemporary states on an interim basis. Establishment of a semblance of a capital market that is effective in mobilizing savings and investment is necessary in order to channel funds to relevant developmental programs and projects.

Until such time when appropriate institutions have been created for these purposes, governments and Islamic banks will have to find ways and means of implementing this very important objective.

Problems resulting from limited resources, skills, saving and investment shortfalls, absence of capital markets and, subsequently, instruments to facilitate exchanges need to be tackled. These bottlenecks stifle the performance of the economies of Muslim countries in general. In cases where agriculture is dominant, these economies lag behind even further in terms of output of goods and services, potentials to generate a viable level of income, and, therefore, savings and investment prospects. Exposure to the commodity market is at best rudimentary and in places non-existent. To discuss the possibilities of a capital market under these circumstances would be untimely if not utterly ludicrous.

It would appear reasonable at this stage to put priority on improving the physical or real commodity (as opposed to futures or capital) markets so that the sector's products can be placed properly before one jumps to the conclusion of the futuristic capital market. This is essential if the goal of generating funds from within agriculture, based on its productive capacity and potential is to be taken seriously in the policy making process. When this capacity has been realized, then foreword linkages may be sought that would carry the sector into the realm of the capital market and therefore transactions. This target can be met only when the sector has passed the test of proven capability to generate significant savings and is thus able to maintain the ability to renovate and re-invest in its own equipments and plants. In the long-run, and under this futuristic assumption, the sector's offer (supply) and, simultaneously, demand outlook would entice investors in the capital market to mobilize the funds it requires for future growth.

1. ISLAMIC FINANCIAL INSTRUMENTS

Literature in Islamic finance is still at a rudimentary stage. This is specially the case with respect to writings on the subject of financial markets, financial intermediation, and Shari'ah.32 deliberations on their viabilities. This notwithstanding, there appears to be a need to fill in this gap in the thinking of scholars in the area. Some scholars have, for instance, suggested that Islamic banks participate in the financing of projects by investing their funds in shares of common stock issued by these banks. Several conditions are posited, accordingly, so that the character of these share participation can be clearly defined. Included among these are (i) that shares would be expected to earn profits or losses depending on the outcome of the operations of the enterprise, (ii) that the value of the share would be determined by such factors as profitability of the enterprise and how well it performs, (iii) that share holders would be expected to participate in the management of the enterprise, (iv) that shares would be considered as permanent contributions that are not subject to withdrawal (i.e., they can not be redeemed once committed) during the life of the enterprise, and (v) that the common stock shares conceptualized as such would be in conformity with Islamic Shari'ah.[32] (Hanawi, p.58).

There are a number of Islamic instruments already in use in varying degrees. I don't wish to list these alphabetically or show how their experience had proven. In the following pages, I will concentrate only on the potential of the participating Islamic Investment Certificates to fill some of the resource gap encountered in agriculture.

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[32] This statement does not take into account the condition that a company's (or an enterprise's) net worth should not include any prohibition of the *Shari'ah*. In particular, that assets and liabilities should not include any rights or debts charged with interest.

Note: I use the expression investment Certificates in a general way to cover all those instruments irrespective of their nomenclature that satisfy conditions suggested in the text. They could be participatory term certificates which are derived from any of the common modes discussed in the previous section.

The advantage of this instrument lies in its flexibility to adopt the specifications of the composite (K*)concept discussed in this study.

2. FEATURES OF THE ISLAMIC FINANCIAL CERTIFICATES

Investment certificates refer to funds earmarked for a specific developmental activity or project in which the investor has a choice as to the manner in which these funds are to be placed. Under this formulation, the funds (generated via investment certificates) owned by a large number of people can be pooled in the hands of a single entrepreneur *(Mudarib).*[33] The shares of individual partners are represented in the certificates they hold in the pool.

Alternatively, shares owned by an individual or a group of individuals could be transferred between buyers and sellers. Islamic *Shari'ah's* concept of "offer/acceptance" is, according to some scholars, a vivid support for such a transfer of ownership of shares. As long as there is a mutual sale-purchase arrangement between those who are willing and able to transact these shares at the going price, the sale of certificates fashioned under this tutelage will be in conformity with the spirit and intent of the Shari'ah.(Ibid, p.61).

Several criteria are stipulated in this transaction i.e., the issuance and exchange of shares. One is that shares should not, in any way, be tied to debts. A transfer should also not violate any other *Shari'ah* rule. There should not be any, direct or implicit, resort to devious practices that would violate the Islamic inter-personal code of conduct and ethics.(Ibid., p.61).

Issuance of Islamic investment certificates is permissible under *Shari'ah.* However, this instrument must conform with the following conditions so that it can be in line with the ideals stipulated in the *Shari'ah, viz.*, profits likely to be earned from investment of these

[33] This enterprise may be owned by an individual farmer or it could be owned by an institution representing a group of farmers.

certificates should be based on effort and sharing of risks. These profits should be earned by undertaking productive activities. Profits should be assessed on actual or potential basis. Evaluation of the profits should be based on the current exchange value of the currency in question. Profits earned should be distributed to those that are eligible.

In terms of distribution of revenues to subscribers, it is expected' that different investment activities undertaken by agencies would be distinctly separated. Calculation of returns for each investment will be identified. Subscriber's shares and remuneration to share holders in the enterprise, i.e., dividends, will be calculated. Rules pertaining to *Mudaraba* contracts will be used to define the relationship between investors and managers of the fund.

Salient features of investment certificates, according to *Shari'ah* guidelines, include the following :

- Investment certificates would be assigned to a specific project or. a set of projects which may be lumped together as a single activity.

- The project or sets of projects would have a specific legal and accounting identity that is identifiable from other assets and liabilities of the agency that is responsible for its management (i.e., Islamic banks or other such financial
institutions),

  The entity using these Islamic instruments would be a trust company or fund.

- The trust company would technically be a restricted *Mudarib* and its relationship with the holders of certificates would be one of owners of capital and a trustee.

- Prices of the certificates would be determined at the par value of the certificates to begin with. Later on, the issuing agency would periodically set the price of the certificate based on the financial position of the project(s) and the supply and demand conditions (of the certificates) then prevailing in the market.

- The issuing agency would be required, according to *Shari'ah,* to provide accurate information and to undertake feasibility studies and analysis of the market subject to prevailing principles.

- Cooperative insurance principles in the Islamic *Takaful* should be adopted to establish a fund that could be used to meet the risks associated with these investments in projects.[34]

Profits at the end of the financial period should be distributed according to the Modaraba contract as follows:

- A certain percentage of the profits should go to the issuing agency representing its share as *Mudarib.*

- A percentage of the profit should go to the owners of the certificates.

- A percentage of the profits should go to the *Takaful* Fund to meet investment risks.

- If issuing of certificates are meant to finance projects involving declining participation, a percentage of the profits should be earmarked for the amortization of the investment. (Ibid, pp. 62-64).

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34 For detailed discussion of these and other types of Islamic instruments, see, among others, Hanawi, p. 62.

3. PRACTICAL METHODS AND APPLICATIONS

The production cycle for crop or livestock enterprises contains elements that make the comprehensive project. The stages of the cycle are analyzed and a detailed economic and financial feasibility study is prepared. From this analysis, the financier (i.e., the Islamic bank) deduces the scope of investment required. For the crop enterprise, in particular, this would involve estimation of investment needs of land preparation activities, the construction of irrigation/drainage systems, planting and cultivation, pre-harvest husbandry activities, harvesting, crop insurance and marketing and storage. These activities would necessarily be pooled and assessed collectively under a single financing blanket which would be treated as a single investment project. Livestock enterprises whether in poultry operations, feedlot enterprises or any other such activity would be conceived in the same light, i.e., without having to break them down into their constituent parts and thus financing each component separately as the case had been in the past.

The composite capital requirement (i.e., K) for each of these enterprises would be the object of financing. Taking this as the goal, we would like to (a) link the option of financing the composite capital requirement ($K^{\cdot}$) to the capital market, (b) emphasize the symbiotic relationship that exist between the project in this sector and the industry, public utilities and other service sectors, and (c) associate mobilization of funds effort with this instrument, i.e., the investment certificate. Below are some practical scenarios for conceptualizing these linkages:

A. The concept of financing wholesome projects is not new. The expression "Turn-key" has been in use for some time. It refers to the idea of setting up a whole project including its specifications, structures and modus operandi in an integrated way. This aggregation involves the physical components of the project as well as methods of financing. In this package, no attempt is made to decompose the project into its constituent parts and then have these parts financed separately. What this implies, with respect to agricultural projects, in

particular is that a crop and/or livestock enterprise would be taken in its entirety as a single project. Necessarily, all the activities involved in the production cycle would be subject to financing. This is precisely what the composite K' in this study attempts to explain.

In practical terms, enterprises producing strategic crops such as wheat, sorghum, etc. can be financed via turn-key arrangements involving provision of the composite capital requirement for the operation. Funds to implement this goal would be mobilized through the capital market via investment certificates. I emphasize that this would only be feasible for crops which are defined as strategic and which take the national interest to heart. This is important because there would be an added weight that would presumably reflect the priority of the society to generate and have these commodities produced. Failure of the market to mobilize capital for such a national objective prompts the added emphasis. States must bear this responsibility in order to generate stock of strategic commodities for the community. In so doing, it removes the scarcity syndrome that has become a common-place among different Muslim communities in many parts of Asia and Africa. Thus making the "food security policy" something tenable in the long-run.

The turn-key concept can be equally important for non-strategic crop and/or livestock enterprises. The possibility of financing new technologies in the area of hydroponics, horticulture, and in large scale feedlot operations through investment certificates using the *Istisna'* contract should be studied at close range. The scope, sophistication and uniqueness of the technology involved in these areas warrant financing through the capital market. Because, in its absence, neither the technology needed, nor the potential of acceptance of these modern methods would be accessible to the small scale agricultural enterprises. Financing of these critical areas would never be forthcoming if mobilization is to be based on the meager resources available to the rural sector.

B. Operations in agriculture, in general, have become technology dependent in recent years. I have emphasized the stages in the crop

enterprise only to show salient features and types of technologies in question. It can, logically, be argued that there is a need to establish a-pool of technology-intensive inputs under a public or private institution that would provide the whole gamut of machines, equipment and expertise to the rural enterprise. This could be a national institution with the objective of servicing the technology requirements of agriculture.

Financing of this institution could be mobilized through share participation using investment certificates which may be floated in the market for private and public interest groups participation. Islamic banks could mobilize the funds but management of the pool would be the responsibility of the institution established for this particular purpose.

In the downstream,. the pool of machinery, equipment; chemical-biological and related services and skills embedded would be offered by the institution through direct sale or use of other familiar modes of financing, e.g., *Ijara,* or *Ijara* involving declining participation *(Tamlik).* Alternatively, *a Musharaka* contract could be used which would be on the basis of sharing of profits of the enterprise jointly undertaken by the farmer /operator and the financier of the mechanical-human capital utilized in the project, etc. On the part of the institution that is managing the program (i.e., the Islamic bank), profits earned would be distributed in the form of dividends according to the share holders' participation.[35]

C. In order to enhance production-oriented activities in agriculture, there would be a need for supplementary investment in the area of irrigation and support services. In particular, development of a reliable system of providing the sector with irrigation water is very

[35] Both the turn-key as well as the technology pool concepts would be favorable in enhancing the rural enterprise production capabilities. Thus, a chance for improving the capacity of the agriculture sector to be an efficient user of the nations resources.

critical. The experience of some member countries in the privatizing existing irrigation networks may be solicited in this juncture.

Sudan is currently contemplating a program that would transfer the operation of the *Gezira, Rahad* and *Kinana* irrigation complexes to the private sector. In so doing, the financing required to improve the performance and spread the benefits to larger localities would have to be mobilized through the capital markets. I presume that farmers in the area would be encouraged to purchase shares in the capital of the institution assigned to take the responsibility of distribution of irrigation water in these schemes. This should take into account the farmers' location and their accessibility to the system of canals and other water distribution networks in place. Instead of paying a lump-sum charge at the end of the year for the amounts of water drawn from the system, farmers could be asked to purchase shares in the scheme that would entitle them to be the owners of the system and still draw their irrigation water needs from these schemes. Ownership of the system would lie with the multitude of participating farmers in the region who are directly linked with the system. The advantage of this new vision is that others who are not in the locality either because they live in other regions of the country or are city dwellers, could also be induced to buy shares. This appears to be an investment opportunity which many people may find lucrative.[36]

Given the inherent potential to generate profits and still fulfill the critical irrigation water requirement for the sector, this program appears to present a strong case for participation and thus willingness

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[36] I had the privilege to discuss how irrigation works operate in the Sudan with a colleague of mine in IRTI who comes from that country. I was enlightened by the idea that there is an on-going study commissioned by the authority that would consider the issue of privatization of the irrigation schemes particularly in these three systems. It would be very appropriate to find that study and to see how this issue is approached. I must add here that the ideas presented in the text on this matter reflect my own personal views only and do not relate to what may be advised for the Sudan by the commissioned report.

on the part of both the private as well as public sector to pool resources to finance these large investment opportunities.

Possibilities of using Islamic investment certificates in other capital-intensive irrigation systems such as desalination of sea water or networks of tube wells can also enhance irrigation potentials. These possibilities should be explored where they appear functional in the future.

D. Crops are subject to many natural risks over which producers have no control. As a result of bad weather, insect infestation and diseases, for instance, thousands of hectares are likely to be destroyed. A crop disaster can be a financial disaster. This can put a farmer and his family out of business.

It is not sufficient to invest directly in agricultural projects and related services alone. Farmers need to be covered against natural calamities as well. This should be considered an important component of the composite package of inputs required by the enterprise. The purpose for which agriculture and/or crop insurance should be established include, among others, the following:

- Assist in maintaining the welfare of the farmer in the event of losses.
- Allow farmers to continue their productive farming following loses,
- Stabilize the social and economic situation of the rural community,
- Assist in the implementation of the government's effort of raising crop and livestock production, thereby increasing rural incomes,
- Promote economic development of small scale farmers by easing constraints on adoption of new technology by

averting risks and by easing the operation of rural credit.(See, Agricultural Bank of Iran Memograph).

Crop insurance is designed to make the insured producer able to transfer a major portion of his risk to a multiperil crop insurance and, in so doing, spread the risk among many producers over many areas and years. This is an attribute of the Islamic *Takaful* in which those in the community who are inflicted with a calamity can collectively be brought back to stand on their own feet so that they can pick up the pieces once again.[37]

With *Takaful,* the farmer's enterprise is likely to stabilize as the insurance coverage allows the provision of a given amount of income at a specified time through either actual production (i.e. by providing funds to produce again) or reimbursement for loss. Aiming for higher yield per hectare, crop insurance enables a farmer to invest additional capital in order to obtain higher yields per hectare. As a result, farmers are likely to increase their borrowing power through the use of crop insurance.[38] In the event of crop failure, the insurance provides the farmer with an alternative source of income to meet loan payment obligations.

These important attributes are presented in order to stress the argument that crop insurance should be considered as an integral part of the composite input scheme required by the enterprise.[39] It is not

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[37]According to Islamic *Shari'ah, Takaful* should be voluntary. It should have a carefully designed set of objectives and should be an independent entity from its sponsor.

[38] The wider the range of disasters covered by the scheme, the better it is for the farmer. This is why many disaster elements are included in such schemes, e.g., natural, man-made, etc. on crops, livestock, poultry, bees, fish, and so on.

[39] The Islamic voluntary *Takaful,* as it is applied to this sector, is economically feasible and spiritually rewarding. This should be widened and structurally expanded to cover as much as is possible of the real world risks confronting the farmer/operator.

meant as an attempt to devise a special instrument that would be applicable to this activity. Mobilization of the fund for crop and/or agriculture insurance *(Takaful) is* based on voluntary participation and that the service rendered to the subscriber rests on the eventuality of a disaster or set of disasters (risks) to which only the farmer's enterprise is exposed. How much could one spread these risks across the spectrum (including among non-participants) is a question that will have to be addressed by *Shari'ah.* The issue whether it is permissible to include potential candidates who, even though not directly affected by these risks themselves, are willing to contribute to the fund for reasons of empathy or believe in the spirit of the *Takaful*, needs to be studied at close range. If this is permissible under *Shari'ah*, then one may explore how and what specific Islamic instruments would best suit this situation so that the required capital can be generated. These are issues which may be taken up in future research.

E. Lastly, the symbiosis between agriculture and the rest of the economy are such that developments realized in one sector could very well generate, with few exceptions, positive spillovers in others. Technological break-through in the industry, for instance, tends to make the choirs in agriculture bearable. Public utilities are now within reach of what once was remote rural communities. Transportation has bridged the gap between the world of production in rural areas and that of consumption in urban centers. Health facilities and technologies are readily accessible to all without discrimination. Extension and education is now delivered to the once impenetrable agriculture by workers trained in these specialties. Markets and information dispersal is beginning to break the traditional monopoly of the few elites or vested interest for this to become a free-for-all grounds. What transpires in the rest of the economy, given the .uniqueness of this advanced age of telecommunication, simply cannot be prevented from reaching the last vestiges of the agricultural community. Taking this into account, it is reasonable to assume that progress made in any of these segments of the economy will most likely affect the scope, nature and performance of agriculture favorably in the long run.

Development of new ideas and instruments in Islamic capital market with respect to public utilities, transportation, public share holding companies, and markets including among others, the stock and "futures" market, will have positive impact on agriculture. Research into these specialized areas are currently being emphasized by the staff of IRTI. My expectations are that the symbiosis I had mentioned in this study will be strengthened. Future studies will then have to take up the job of replicating or tuning up these instruments to the realities of agriculture in the member countries.

VI

CONCLUDING REMARK

I started this study by exploring the realities in which agriculture works. The production-marketing process through which the output by the sector must undergo was set as the premise for this examination. Then the crop enterprise was taken as an illustration to elucidate the mix of resources required to implement the production cycle which would eventually culminate in the generation of the output anticipated. This production process was interpreted using the familiar production function which sets factor inputs in the light of outputs of goods and services required.

The production function thus conceptualized is then examined in the light of resources required. Requirements of capital for each of the factors in the production relationship is globally identified. Sources of capital required to set the production cycle in motion is examined taking into consideration traditional means as well as contemporary methods of mobilizing funds. Several scenarios are examined and, compared with a view to isolating those options most suitable to benefit the providers and users of finance.

The study comes out strongly in favor of the composite capital (K^*) option of mobilizing resources for the sector. Advantages implied by this option are examined and possibilities of carrying this idea into the capital market is examined. In particular, possibilities of using Islamic investment certificates as instruments to mobilize capital for the sector is discussed. It is argued that these instruments have the added advantage over others that these are adaptable to the concepts of composite capital. Capital required by a project is the focus of both of these ideas. The former, i.e., investment certificates, assume financing of requirement of a project in full. The latter, is structured such that the production cycle concept is taken as the frame of reference for any attempt to mobilize the capital requirement for a project. This congruency, at least between the definitions in the

perspective of this study, allows transition from the idea of mobilizing resources for projects/operations through modes to mobilizing the same through instruments and therefore the secondary markets.

Each of these concept is well founded. The idea of the composite capital (K^*) is technically derived from the agronomic production cycle and the economics of resource mobilization associated with each stage of the cycle. Investment certificates are Islamic secondary market instruments which have been floated, among others, as a viable means of mobilizing capital through intermediation. The linkage advocated between the two in this study proposes *yet* another alternative of strengthening the capacity of Islamic banks in mobilizing capital for agriculture.

There is no ambiguity in the fact that these two concepts could be linked to serve the goal required. In order to evaluate the merit of this conclusion, it is necessary that each of these ideas be assessed in its own right and then their joint or collective contribution weighed relative to their efficacy in mobilizing the capital required by the sector. This is the job for the specialists in *Shari'ah*, economics, and finance. An applied/empirical case study that looks into methods of financing the crop/livestock cycle operations would be very relevant to begin with. This I wish to 'approach in a forthcoming study *Insha' Allah.*

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ISLAMIC DEVELOPMENT BANK (IDB)

Establishment of the Bank

The Islamic Development Bank is an international financial institution established in pursuance of the Declaration of Intent by a Conference of Finance Ministers of Muslim countries held in Jeddah in Dhul Qa'da 1393H (December 1973). The Inaugural Meeting of the Board of Governors took place in Rajab 1395H (July 1975) and the Bank formally opened on 15 Shawwal 1395H (20 October 1975).

Purpose

The purpose of the Bank is to foster the economic development and social progress of member countries and Muslim communities individually as well as jointly in accordance with the principles of Shari'ah.

Functions

. The functions of the Bank are to participate in equity capital and grant loans for productive projects and enterprises besides providing financial assistance to member countries in other forms of economic and social development. The Bank is also 'required to establish and operate special funds for specific purposes including a fund for assistance to Muslim communities in non-member countries, in addition to setting up trust funds.

The Bank is authorized to accept deposits and to raise funds in any other manner. It is also charged with the responsibility of assisting in the promotion of foreign trade, especially in capital goods among member countries, providing technical assistance to member countries, extending training facilities for personnel engaged in development activities and undertaking research for enabling the economic, financial and banking activities in Muslim countries to conform to the *Shari'ah*.

Membership

The present membership of the Bank consists of 48 countries. The basic condition for membership is that the prospective member country should be a member of the Organization of the Islamic Conference and be willing to accept such terms and conditions as may be decided upon by the Board of Governors.

Capital

The authorized capital of the Bank is six billion Islamic Dinars. The value of the Islamic Dinar, which is a unit of account in the Bank, is equivalent to one Special Drawing Right (SDR) of the International Monetary Fund. The subscribed capital of the Bank is 3,654.78 million Islamic Dinars payable in freely convertible *currency* acceptable to the Bank.

Head *Office*

The Bank's head office is located in Jeddah in the Kingdom of Saudi Arabia and the Bank is authorized to establish agencies or branch offices elsewhere.

Financial Year

The Bank's financial year is the Lunar Hijra year.

Language

The official language of the Bank is Arabic, but English and French are additionally used as working languages.

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