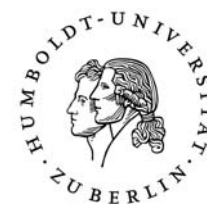


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**Urban and peri-urban agriculture
as a livelihood strategy of internally
displaced persons in Khartoum**



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**THE AHFAD-HUMBOLDT LINK PROGRAMME
WOMEN IN DEVELOPMENT**



**Urban and peri-urban agriculture as a livelihood strategy
of internally displaced persons in Khartoum**

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Abstract

Urban agriculture is a very important activity of refugees although it has not been in the focus of research as today. This research was done in the region of greater Khartoum in the Sudan which was the destination of migration of 5 million people in the last 25 years coming in cause of environmental disasters and military conflicts. By the realization of urban and peri-urban agriculture the absolute poverty is strongly reduced. But the realization of urban agriculture in a new and strange environment creates many problems coming from the natural, economic and social differences between the homeland and the destination of migration. Generally, there is a low degree of agricultural development, but over the time, differences are emerging. There is a general tendency that all the migrants wish to return to their homeland, but the concrete intentions to go back has a greater importance in the migrants with smaller fields and a lower degree of agricultural development. The social factors are also important – not only in choose of the destination of the migration, but also in the decision to stay or to return which is affected by the social integration into the host community.

Keywords: Sudan, urban agriculture, poverty reduction, social differentiation, development of urban agriculture, intention of the migrants to return, social integration of the migrants

Zusammenfassung

Städtische Landwirtschaft ist eine sehr wichtige Tätigkeit von Flüchtlingen, obwohl sie bis jetzt noch kein wichtiger Forschungsgegenstand ist. Das vorliegende Forschungsprojekt war in der sudanesischen Region „Greater Karthoum“ durchgeführt worden, die das Migrationsziel von 5 Millionen Menschen war, welche in den vergangenen 25 Jahren wegen Umweltkatastrophen und kriegerischen Auseinandersetzungen aus ihrer Heimat geflohen waren. Durch die Realisierung von urbaner und peri-urbaner Landwirtschaft wird die absolute Armut stark reduziert. Aber das Betreiben von städtischer Landwirtschaft in einer neuen und fremden Umgebung schafft viele Probleme, die von den natürlichen, ökonomischen und sozialen Differenzen zwischen der Heimat und dem Migrationsziel herrühren. Im allgemeinen hat die städtische Landwirtschaft der Flüchtlinge einen niedrigen Entwicklungsgrad, aber im Laufe der Zeit entwickeln sich Unterschiede. Es gibt die allgemeine Tendenz, dass alle Migranten den Wunsch haben, in ihre Heimat zurückzukehren, aber konkrete Rückkehrpläne haben eine größere Bedeutung bei Migranten mit kleineren Feldern und einem niedrigeren Grad landwirtschaftlicher Entwicklung. Auch die sozialen Faktoren sind wichtig – nicht nur im Hinblick auf die ausgewählte Zielregion der Migration, sondern auch im Hinblick auf die Entscheidung zu bleiben oder zurück zu kehren, welche von der sozialen Integration in die Gastgemeinschaft beeinflusst wird.

Schlüsselwörter: Sudan, städtische Landwirtschaft, Armutsreduzierung, soziale Differenzierung, Entwicklungsgrad städtischer Landwirtschaft, Rückkehrabsicht der Migranten, soziale Integration der Migranten

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1. Introduction

The number of internally displaced persons (IDPs) in Sudan is estimated to exceed 5 million persons; half of them are settled in the greater Khartoum area comprising the regions of Khartoum, Northern Khartoum and Omdurman on the other side of the Nile. The causes for these population movements are the civil wars (1969-1972 and 1983 since now), tribal conflicts and the dryness-crises in 1984 and later. There is now an extensive scientific literature on the amount of the refugees, the cause of displacement and the situation of the refugees in the Sudan (a very good overview of the literature has been done by NILSSON (2000), but urban and peri-urban agriculture as a livelihood strategy of the refugees have not yet been a focus of scientific studies. One rare exception is the study by KAISER (2006) on Sudanese refugees in Uganda which includes also agricultural activities, but this study is centered on camps in very remote areas. This is astonishing since many thousands of Sudanese refugees are living from agricultural activities such as plant production, animal herding and also fishing.

Many refugees are living in camps comprising thousands of refugees which are situated in the periphery of Khartoum, Northern Khartoum and Omdurman. Some of these camps have been established by the state and others have been established by the refugees themselves coming often from the same region.

An example is the Muwailih camp in the south-western direction of Omdurman that has been established by the state and where approximately 8000 people are living; most of them fled the dryness-crises in Western Sudan. In this camp, 85 % of the population is involved in agriculture and animal holding. In the Wad El Bashier Camp and in the Mayo Camp, 92,5 % of the IDPs living there have livestock, mostly poultry, goats and donkeys, and most cultivated also fodder for these animals. Also in the El Gharaza and El Sanaheer Camps, most of the IDPs are practicing agriculture, especially the women are working as farm labourers.

There is less a problem of land scarcity in this region than a problem of access to water since the regions which are not near to the Nile, the White Nile and the Blue Nile are often not settled. So, the migrants create wells for irrigation and drinking water.

Another reason for the importance of peri-urban agriculture is the fact that the migrants have only few chances to enter into the urban labor market not the less because they have not the qualifications which are needed. A great part, especially women are also illiterate. So, there is a tendency of a very high rate of unemployment and absolute poverty. But if the migrants practice urban agriculture and can make this on their own land, they can achieve self-sufficiency as if had been found for two thirds of the IDPs in the Muwailih camp. Most of the refugees of the rural areas have an agricultural background which they can utilize, but – in case of differences in the natural conditions between their homeland and greater Khartoum – learning processes are necessary. A part of the refugees are working as agricultural labourers on plantations along the Nile and its feeder streams, but there is also a situation of concurrence with seasonal labourers coming from the Ghezira-Scheme.

2. Research questions

This research is centered on five major topics:

1. How did the refugees obtain land access in order to realize urban and peri-urban agriculture? This question is not addressed to people who are living in camps organized by the Sudanese State but to people who are living in camps which the refugees organized themselves or to people who are living not in camps but in a more dispersed way.
2. What are the major changes of agriculture between the homeland of the refugees and the agricultural activities in greater Khartoum?
3. Which are the major problems of the agricultural activities of the refugees in greater Khartoum?
4. What is the degree of development of the agricultural activities of the refugees? Which are the determinants of the differences?
5. Have the migrants the intention to stay in greater Khartoum or will they return to their homeland? Which are the determinants of these intentions?

3. Methodology

After the development of a standardized questionnaire in a pre-study this questionnaire was applied in January 2004 in four camps of greater Khartoum:

1. In the Muwailih camp southern of Omdurman where approximately 8000 people are living, mainly refugees who fled environmental disasters. This camp was established by the Sudanese State. Agriculture has a great importance there. The people who are living there are from different ethnic groups and, generally, they are not so poor as the residents in other camps. In this camp, 50 people were selected for the interviews.
2. In the Wad el Baschier Camp (45.000 refugees, also in the eastern part of Omdurman) and in the Mayo Camp (80.000 refugees, southern of Khartoum) most of the refugees of these camps fled the war in Southern Sudan. These camps were also established by the State. In this camp, livestock is of great importance. From each of these two camps, 20 people were selected for interviews.
3. In El Gharaza and El Sanaheer (35 km in the north of Omdurman). The displaced people in these camps who fled environment disasters in 1984 were mostly from Kababish tribe of northern Kordofan who are similar to the host community used to have trade connections. These two camps were established by the people themselves and not by the state. The people are living mainly from agriculture. 50 persons were interviewed in El Gharaza and 10 in El Sanaheer.

In order to answer research questions which could not be answered on this basis, the research was continued following a cross-sectional survey design in May and June 2006.

A sample of 90 farmers (IDP's) was selected using the systematic sampling technique. The size selected was derived from the sample size equation (unknown prevalence) and with a population of 350 farmers (other than wage labourers).

Male farmers dominate with only two women involved in farming as producers. Generally the educational level of most of the farmers is low (53.3% of them were illiterate or had informal or primary education), while 33.3% of them had primary and secondary education. Those who visited the high school represented only 13.3% of the farmers. The low educational level of farmer can partly be explained by their age groups as 73.3% are aged between 21 and 40 years and 22.2% are aged between 41 and 60 years (where by the time they were at school age, formal education was not considered as important for most of the tribes in the original habitat).

In total, 240 persons were interviewed. There is no claim of representativeness of the results of this study.

4. Results

4.1 Land access

As a long tradition of migration theories have shown, social relations are crucial for migration processes. Basically there is tendency of IDP's to seek refuge in areas where they can find a degree of support and acceptance. Therefore, they try to invest in social relations like kinship, approaching former migrants from their areas or approaching people with whom they had other relations in the past (trade, business or religious ties). This strategy is followed in Omdurman by some of the tribes, which were displaced by drought in the mid eighties and nineties from western Sudan (Kordofan and some parts of Darfur). The social relations invested in are a result of long time transactions (e.g. livestock industry), which was strengthened by old migrants in the city dating back to the Mahdya era in the 1880's. A survey carried out by ABDELAAL et al. (2003) showed that 78% of the nomad IDPs in Omdurman had access to animal breeding facilities including land (although the number of livestock is not high), 34% of them based the access means on social relations only, while the rest based it on both social relations and other reasons.

At the goal of migration, the migrants try to develop strategic partnerships between households or by linking up with people with access to land, individual lobbying with caretakers of land or joint lobbying for access to land with private institutional land owners or the local government as well as the occupation of "vacant" land and the interruption of wastewater disposal lines.

If there are traditional relations or affinities between the ethnic groups of the migrants and the ethnic groups resident in greater Khartoum, in some cases tenure rights to communal land are

claimed by some tribes on customary basis. Therefore, IDPs try to have access to this land after the acceptance of the particular community leaders. This type is found only in peri-urban areas where few people (in a community) claim to have tenure rights. However, such a strategy leaves IDPs vulnerable and subject to that community mode.

The most common strategy of land access of the refugees is land renting and sharecropping. These are the most common strategies followed by migrants and IDPs in urban centers where access to water resources is unaffordable to them. ELSIR (2005) reported that 87.7% of the farmers in Khartoum are either migrants or displaced, of whom 81.7% are engaged in sharecropping and the rest rent the land. In Juba, 76% of the farmers are displaced, of whom 44% are engaged in sharecropping, 10% rent the farms, while the rest farm on vacant lots (DORO, 2005). It should be noted here that farming in vacant lots in central and northern Sudan is impossible due to insufficient rainfall and the inaccessibility of other surface water resources in the cities.

Are very limited portion of IDPs benefit from projects designed by the State to help them. These projects provide them with the necessary production inputs and insure secure access to farming plots that are distributed on tenancy basis. The impact of such projects is very limited since they are subject rather than policy oriented. The establishment of these projects was not part of a general policy targeting urban agriculture, nor was it targeting the vulnerable situation of IDP's. At a stage some projects like these were relocated more than once for the benefit of residential areas, which contradict the consideration of urban agriculture in urban planning policies and strategies. This shows that propaganda might be the reason behind establishing projects for people who were mainly nomads before displacement. Two projects are found in Khartoum State; one in western Omdurman and the other in southern Khartoum (Mayo area) where some IDPs farm are using sewage water.

Some of the migrants became land owners in the course of the time. At the beginning, these pieces were very small (1-4 feddan), but they could also grow. The residents of the Muwailih camp where are also living the better off residents declared the land that the Sudanese State had put at their disposal as their own land.

4.2 Major changes of agriculture between the homeland and in greater Khartoum

Due to the differences of the natural conditions such as soil quality and climate, of land and water availability and the differences in the economy and the markets, the refugees must realize different agricultural practices in greater Khartoum than in their homeland. So, the production of cereals which was realized by 92.2 % in the homeland is only realized by 5.6 % in greater Khartoum. Also animal rearing is the subject of a strong decline: Whereas it was realized by 96.7 % in the homelands, in greater Khartoum 72.7 % had less than five animals.

The difference between Khartoum and farmers' original habitat in the numbers of animals raised can possibly be attributed to their displacement reasons; as they either lost it during the drought times, or they sold it at sometimes lower value prior to heading to Khartoum.

Tradition is another dimension of animals keeping which is different than the situation in major cities like Khartoum. Furthermore, farmers' limited financial capacity adds to the reasons behind the few numbers of animals they rear. The farmers must also cultivate fodder crops in order to nourish the animals because greater Khartoum is as zero grassing area.

In the inverse, there is an increase in the production of vegetables from 54.4% to 77.8% and from fruits from 24.4% to 54.4%.

The irrigation system in greater Khartoum is also totally different than this in the homeland because water pumps and shallow wells replace the surface bonds and the wells in the homeland.

As to the economic situation, the great majority of the people produced both for the subsistence of their family and for sale, and this situation continue also after the migration to greater Khartoum. Nonetheless, the proportion of subsistence production declines and the proportion of the products which are sold and which are bought are increasing.

4.3 Problems of the refugees in urban agriculture

There are many problems facing the refugees in their activities of urban and peri-urban agriculture. The frequencies of the main categories of the major problems are the following:

Table 1: The frequencies of the main categories

Category	Frequency	Percent
Plant diseases	25	27.8
Marketing of the crops	17	18.9
Irrigation problems	16	17.8
Problems of flood	12	13.3
High costs of inputs	9	10.0
Financial problems	8	8.9
Total	90	100

Source: own data

It must be noted that this table is only an indication of the priorities of the problems and not of their extent. On the one side, the importance of plant diseases is in relation to the environmental pollution of the air, the water and the soil in greater Khartoum which is certainly higher as in the rural homelands of the refugees which are also not so affected by pests which are coming to the metropolis of Khartoum from all of the world. On the other side, the refugees in greater Khartoum cannot afford traditional forms of plant protection such as mixed cultures, concerted special dispersion of the same cultures in order to stop the diffusion of certain pests or the use of composted organic waste in order to combat plant diseases.

As to the problems of the marketing of the crops, it could be assumed that they would be less problems of marketing as in the rural – especially the remote – areas where the peasants are often exploited by the traders. But the refugees who sell only at 10% on their farms have only the choice of being exploited by the traders of Khartoum who are foreigners to them and with them they have no traditional positive relations or to use expensive means of transportation in order to reach the local and the central market. An exception is the situation in El Gharaza and El Sanaheer where the refugees had traditional trade connection with the local population and also where they are integrated into the local marketing system.

As to the irrigation, the main problems are fuel costs and the breakdown of pumps as most of the water is coming from water pumps; electricity problems are also important. The few refugees who have fields at the river of Nile suffer from the recession of the Nile water in the summer and the others from the sinking of ground water. On the other side, in the winter, they can have problems of flood.

Attempts for the resolution of all these and other problems are subjected to their financial constraints which can also block the use of other inputs and investments. Generally, the refugees can also not receive credits. The refugees practicing agriculture are also not organized in farmer organizations which could defend their interests in the administration and the government.

The financial weakness is also in relation to the problem of poor extension services because today these services must be paid what the refugees cannot do and the state is not more offering these services as before. Local agricultural extension would be very important because the agricultural knowledge that the peasants who flew from their homeland brought with them is often not applicable in the new natural environment.

4.4 Degree of Development of Agriculture

The majority of farmers (64.4%) produce at comparatively low levels of agricultural development depending only on local hand tools, local varieties and few numbers of animals raised. 22.2% of them produce at medium levels using hired tractors or draught animals for land preparation, imported seeds and cows hybrids bought from the hybridization department of the veterinary service of the Ministry of Agriculture. 12,3% produce at high levels of agricultural development as they use tractors for land preparation, own more numbers of cows hybrids and have more investment in the production process. Despite this, hand tools for agricultural production are adopted in the three levels of agriculture. Mechanization is only used in land preparation and water pumping. The available resources to the farmers, their capital investment, technology adopted and the intensification of production determine the degree of agricultural development. Those who produce intensively are more likely to have more investment in agriculture, higher mechanization levels in land preparation and more numbers of animals of good hybrids. The low percentage of farmers producing at higher degrees of agricultural development can be justified by the condition of IDP's at the time of displacement along with the assistance they received when entering farming in Khartoum. Most of the farmers were vulnerable and didn't have enough resources to adopt higher levels.

A bilateral presentation (cross tabulation) of the degree of agricultural development as influenced by a set of other variables was carried out. The results showed that the degree of agricultural development was significantly influenced by land ownership ($p < 0.05$). Farmers do not have the interest of putting great investments on land that they do not own or at least they do not have the capacity to sacrifice much of their effort and time in a location if they know that they are leaving sooner or later as it will be shown when discussing their intention of going back to their homeland. Problems encountered by farmers in Khartoum did not influence the degree of agricultural development as these affect the general situation for all farmers regardless of their origin, ownership or area cultivated. Almost all the farmers working at high levels of agricultural development had invested in agriculture (double the number of those working at low and medium levels of agriculture), while the cross tabulation showed that the majority of farmers working at low or medium levels did not invest in agriculture. This resulted in a significant influence of the investment in agriculture on the degree of its development ($p < 0.05$). The influence of the area cultivated on the degree of agricultural development was marginal. The majority of the farmers producing at low levels of development worked on medium to large size farms (ranging between 7 - 10 feddans¹ and larger than 10 feddans, respectively), the same trend can be observed for farmers who produce at medium levels. High levels of agricultural development require more resources and investment in agriculture which a considerable portion of the IDP's lack.

The year of farmers presence in Khartoum (year of displacement) did not have a significant influence on the level of agricultural development they work with. This falls within the general context of agricultural development in Khartoum rather than being subject to the times farmers had been in the city. Apparently farmers who spent more time in the city should have had established themselves well and tend to improve their production conditions, but it seems that the production conditions in the city along with the available resources had limited their production levels to low or medium ones.

Farmers who invested in agriculture after displacement represented 22.2% of the farmers, who invested mainly in buying animals (60%) or land (30%); 10% invested in crops trade. Such a kind of investment will boost their production capacity and diversify it at the same time. Most of the farmers who invest in agriculture do that by allocating more resources to buy animals or hire land (production measures). Apparently the results show lack of interest of the IDP's in investing in activities other than production like distribution and marketing. In fact, production is less risky than other types of investment in agriculture from one side. From the other side, the resources available to these farmers are limited and would not allow them to compete in the marketing procedure which is more risky. However, all farmers agreed upon that there are good possibilities of investment in agriculture in Khartoum.

¹ 1 feddan = 0,42 hectare

4.5 Intentions to stay at Khartoum or to return to the homelands

For the knowledge of the situation of greater Khartoum – also in respect to urban agriculture – of the homelands, but also of the biographies of the individual refugees and their families it is important to know of the refugees have the intention to stay at greater Khartoum or if they have the intention to go back to their homelands. If there are differences in these intentions, it is important to know these causes which can explain these differences.

At first, there were differences of these intentions on the level of the camps.

On the camps basis, the majority of Wad El Bashier and Mayo Jebel Awliya and El Morada wanted to go back to their place of origin (table 2). These IDPs were mostly from southern and western Sudan who was driven out of their place of origin by civil war. They were awaiting the civil war to come to an end to go back to where they belonged. In Muwailih camp, 66 % of the IDPs wanted to remain in Khartoum area, as they have acquired land and had begun partial integration into the Khartoum communities who are more or less socially, culturally and economically are close to them. In El Ghraza and El Sanahir areas, some of the IDPs already partially returned to their place of origin after the good rainy seasons that came to north Kordofan and north Darfur in the late 1980s and 1990s.

Table 2: Willingness to go back to their place of origin when the conditions improved (percentages of the interviewed people)

IDPs in Muwalih camp	34.0%
Wad El Bashier and Mayo Camp	57.5%
El Sanahir and El GFharaza	50.0%
Mean	47.2%

Source: own data

The minorities of IDPs in Wad El Bashier and Mayo camps, who preferred to stay in Khartoum area rather than going back to their place of origin said so because of job opportunities, stability and security of life. These IDPs came fleeing from the civil war in their place of origin and, therefore, from a psychological point of view the factors of stability and security seemed very important for them, and availability of services such as health, education for their children, potable water, electricity etc. did not seem to be of priority to them. On the contrary, IDPs in Mayo, El Sanahir, and El Ghraza seemed to appreciate the availability of services as factors of their decisions to go to their place of origin or to remain in their displacement.

It is evident from the relative distribution of farmers by their intention of returning home with reference to the area they cultivate (table 3), that most of the farmers who preferred to stay produce on comparatively medium to large plots. This makes them more secured in their new community. This is despite the fact that most of those who wanted to return home produce on

the same range of plot size. However, the influence of plot size they cultivate in Khartoum on farmers' desire to go back is insignificant.

Table 3: IDP's intention to return home as influenced by the area of cultivated land in Khartoum

Area of cultivated land (Khartoum)		Intention to return home		Total
		yes	no	
<7 feddans	Count	36	5	41
	% within Intention to return home	46.8%	38.5%	42.2%
7-10 feddans	Count	20	3	23
	% within Intention to return home	26.0%	23.1%	25.6%
> 10 feddans	Count	21	5	26
	% within Intention to return home	27.3%	38.5%	28.9%
Total	Count	77	13	90
	% within Intention to return home	100.0%	100.0%	100.0%

Source: own data

The same trend can be noticed when considering farmers' intention of returning home with the time spent in Khartoum as shown in table 4. Most of the farmers, who wanted to stay in Khartoum, were there for more than 21 years. A considerable number of farmers who wanted to return back were there for the same time range. This shows a marginal effect of the time farmers lived in Khartoum on their decision of going back home.

Table 4: IDP's intention to return home as influenced by the years of migration/displacement

Year of migration/displacement		Intention to return home		Total
		yes	no	
< 10 years	Count	7	4	11
	% within intention to return home	9.1%	30.8%	12.2%
10-20 years	Count	31	1	32
	% within intention to return home	40.3%	7.7%	35.6%
21-30 years	Count	21	5	26
	% within intention to return home	27.3%	38.5%	28.9%
31-40 years	Count	14	1	15
	% within intention to return home	18.2%	7.7%	16.7%
> 40 years	Count	4	2	6
	% within intention to return home	5.2%	15.4%	6.7%
Total	Count	77	13	90
	% within intention to return home	100.0%	100.0%	100.0%

Source: own data

The influence of investment in agriculture on farmers' desire to return back home was insignificant. However, most of the farmers who intended to return home did not invest in agriculture in Khartoum. This gives them less ties to the city, hence they can return back without any fears of losing their investment. Moreover, most of the farmers who wanted to stay in the city did not invest in agriculture in the city. This shows that farmers were reluctant regarding the decision of staying in the city. What actually govern their decision are other factors than their situation in the city.

Despite their high level of agricultural development, all the farmers who produce at that level had the desire of returning home. This shows that the intention of returning home was irrespective of the degree of agricultural development. The majority of farmers who wanted to stay in the city produce at low levels of agricultural development (table 5).

Table 5: IDP's intention to return home as influenced by the degree of agricultural development in Khartoum

Degree of Agricultural Development		Intention to return home		Total
		yes	no	
Low	Count	51	7	58
	% within intention to return home	66.2%	53.8%	64.4%
Medium	Count	14	6	20
	% within intention to return home	18.2%	46.2%	22.2%
High	Count	12		12
	% within intention to return home	15.6%		13.3%
Total	Count	77	13	90
	% within intention to return home	100.0%	100.0%	100.0%

Source: own data

From the previous presentation, it is obvious that the desire of going back is not influenced by production related factors. It is rather influenced by heritage and the feeling of belongingness to the original area. This situation is unlike the normal as people tend to stay in areas where they are more secure or where they are making a good living.

5. Conclusions

It can be concluded from the results that urban and peri-urban agriculture is an important survival strategy of the IPPs. Regardless of the dimensions of the fields, absolute poverty is reduced. The refugees coming from rural areas can also valorize their agricultural capacities instead of being workless.

But there are also many problems for this urban agriculture which are due to the differences in the natural conditions between their homeland and greater Khartoum, the greater importance of market production in greater Khartoum than in their homeland and not the least the fact

that the refugees have not access to services of agricultural extension. These problems are important for low degree of development which is typical for the urban agricultural activities of the refugees. The long term refugees know well a development of their agriculture, but this development is only an extensive development in the sense that the cultivated areas become greater in the course of the time but not the technological level and also the marketing strategies. The practical conclusion would be that the Sudanese state should not only allow the use of land by the refugees in greater Khartoum which is often only a passive tolerance, but that the refugees should be supported in the development of efficient agricultural activities.

In their mind, the refugees who were forced to leave their homeland, remain bond to their homeland regardless of the dimension of their fields they cultivate, but the concrete intention to return diminishes with the dimensions of their fields. Naturally, the better facilities such as job possibilities, health care, better education opportunities for the children etc. are also push factors for staying in greater Khartoum. The intention to return diminishes also with the integration into the host community; so, the migration process is embedded into social structures as it still happens at the beginning of the migration process where the IDPs go there where people are living which they still know or with whom traditional relations exist.

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