

Vol. 7 Issue 7 October 2013

West Kurdofan University
Journal of Sciences & Humanities



Research Papers (Arabic):

**The prevention of the preacher against the obstacles of Daawa
(Islamic call)**

The misguided cause of heart disease and self.

Dr.Hassan Mohamed Fudlamoula

**The Addition of the Trustee Rawi on the Sacred Saying between the
Acceptance and the Return as Stated with the fundamentalism and
the Modernizers**

Dr. Mohamed Abd Allah Abd AlRaheem

**Possibility Extent of Using Target Costing Approach as a tool to
Forecast for Continuity of Companies: Afield Study paint
manufacturing Companies- Khartoum state**

Dr.Musa Eisa Mohmmmed

**Diplomacy and the media and their role in achieving the foreign
policy of the States**

Khalil Abdalla Ali

Research Papers (English):

**Land tenure and distribution as constraints on agricultural development:
Case Study North Kordofan State**

Abdelmagid Ahmed Mohammed¹

Sayed Ali Fadul Elmola Zareba²

Salah Masry Mohammed Mahadi³

Biannual Journal issued by the University Editors, Board

ISSN 1858 – 6554 : ردمد



Sudan Currency Printing Press

Land tenure and distribution as constraints on agricultural development: Case Study North Kordofan State

Abdelmagid Ahmed Mohammed¹
Sayed Ali Fadul Elmola Zareba²
Salah Masry Mohammed Mahadi³

Abstract

Land tenure and distribution are key factors to understanding the structure of production and power in traditional rain-fed sector. Various forms of land tenure influence the stability of the traditional rain-fed sector in rural area. If large numbers of farmers have only temporary access to land (through short-term sharecropping agreements, for example), social problems are likely to be severe. The following analysis is an attempt to characterize man/land relations and indicates the extent to which these relationships represent major constraints on agricultural development in Bara, North Kordofan State in particular, and Sudan in general. Therefore, the study conducted on the basis of cross-district analysis and extrapolates the results to all districts in north Kordofan state, Sudan. 146 households were randomly selected for interview using pre-constructed questionnaire during 2010/2011 season.

The results indicated that the socio-economic in general and land tenure system are the important factors affecting on the production and productivity of crops in traditional rain-fed sector and moreover affecting the agriculture development in North Kordofan State. In addition to that there was a relationship between socio-economic characteristics and land tenure which use in the agricultural development for example males at the level of significance of 5%, and no relationship between economic characteristics and land tenure which use in the agricultural development for example females at the level of significance of 5%

Keywords: Land Tenure, Land Use, North Kordofan State, Household

العلاقة بين الخصائص الاجتماعية ونظم الأرض واستخداماتها في التنمية الزراعية

مستخلص البحث

يهدف هذا البحث للإسهام الي حل المشكلات والمعوقات التي تواجه القطاع الزراعي والتنمية الزراعية بولاية شمال كردفان.

وقد تم إتباع المنهج الوصفي والتحليلي ودراسة الحالة، جمعت البيانات عن طريق أداة الاستبيان على عينة عشوائية بسيطة مكونة من المزارعين بمنطقة الدراسة قوامها 146 مزارعاً ومن ثم معالجتها إحصائياً، تحليل البيانات تم باستخدام برنامج الحزم الإحصائية للعلوم الإجتماعية (SPSS) للحصول على نتائج يمكن من خلالها التأكد من إثبات أو نفي فروض البحث ثم صياغة مبررات مقبولة من قبل الباحث لما توصل إليه.

كشفت نتائج الدراسة من خلال الخصائص الاقتصادية والاجتماعية للمبحوثين في منطقة الدراسة أنه توجد علاقة بين الحالة الاجتماعية ونظم استخدامات الأرض في الزراعة التقليدية في منطقة بارا بولاية شمال كردفان بالنسبة للذكور عند مستوى معنوية 5%، بينما لا توجد علاقة بين الحالة الاجتماعية ونظم استخدامات الأرض المستخدمة في الزراعة بالنسبة للإناث عند مستوى معنوية 5%.

Introduction:

The land tenure system and land use are essential to sustainable agricultural production and development. Land tenure system and use for agricultural development has agronomics, social, economic and political dimensions and deals with the multipurpose use of land, trade-offs between different functions of land, and often conflicting interests among different categories of land users and conflicts between collective and individual aspirations and needs. Land use is therefore a multiple objective endeavor, which includes a variety of complex agronomic, ecological, social and economic processes. Land tenure system can usefully be characterized by its main components: choosing objective, stock-taking and diagnostic survey, demand and supply projections, setting targets and allocating resources, the choice of strategies and policies, programs and projects, institutional changes involved, monitoring, reporting, control and evaluation.

Despite of the historical development of different land use patterns, the study of land-use menu, delete methods and different technical methods, used to identify the different characteristics of the region to use in the methods of scientific planning, economic development, and figured in the relationship of man to land as well as to meet its needs.

Recently, it was found that there was global interest in developing methods of use of land, as confirmed by the committee of the International Geographical Union, held in Clark University, 1951 also there were was comprehensive survey of patterns of land use in all parts of the world, followed by number of conferences and seminars aimed to develop and promote the land use, such as the Geographical Congress atheist Twenty, held in New Delhi in 1968 for developing countries in the world, the

Land tenure and distribution as constraints on agricultural development

Abdelmagid Ahmed Mohammed & Sayed Ali Fadul Elmola Zareba & Salah Masry
Mohammed Mahadi

Environment Conference held in Acetkhom in 1972, a seminar on Population and Development which held in Cairo in 1973, and finally the Earth Summit held in Rio de Janeiro 1972. (Abdel-Maksoud, 1974).

Research objectives:

The research aimed to the following:

- 1- To evaluate the relationship between socioeconomics and land use in agricultural development.
- 2- To develop the strategies and policies that helping and maintaining the land use and tenure.

The importance of research: the importance of research stems from the following:

- 1- There are no previous studies in this subject.
- 2- The importance of land tenure and use as the basic pillar for the provision of food in addition to the adoption of the land by the majority of the population in the region.
- 3- The results of this study should be useful for the concerned authorities to develop their policies, plans and strategies that help in the development of the agricultural sector.

Problem Statement:

A serious problem the world is facing at present is the deterioration of both the natural environment and natural resources. Human activities generate environmental pressure in different ways. Notable among them is overexploitation of renewable resources such as forests and degradation of basic resources such as Land and water

Primary hypotheses are:

- 1- No statistically significant relation between socio economic characteristic for example males and land use.
- 2- No statistically significant relation between socio economic characteristic for example females and land use.

Methodology:

The study used both primary and secondary data. The primary data were collected through direct interviews focused on the heterogeneity of the farmer's household heads using questionnaire. A simple random sampling method was implemented, and accordingly a number of 146 households were randomly selected during 2010/2011 cropping season. While, the secondary data were collected from published and unpublished sources, which included records, books, periodical reports and journals from relevant institutes.

Literature review:

Study Area:

North Kordofan State is located in the middle west of the Sudan, lies in the arid and semi arid zones between latitudes $16^{\circ}36' - 16^{\circ}$ north and $14^{\circ} - 12^{\circ}$ south and longitudes $20^{\circ} 21' - 32^{\circ}$ east and $30^{\circ} 56' - 26^{\circ}$ west. It encompasses an area of 244.700 km^2 with total human population estimates based on the last census 2009, of around 2,920,992 people most of which allocated in the rural areas (80%) and the rest in the urban areas (20%) (CBS, 2010).

The present investigation focused Bara city, near about 450 Km from the Khartoum capital of Sudan. This is the semi-arid rain fed area in western Sudan (Latitude 11 and 12.5 N, longitude 22 and 30° E) with temperatures

Land tenure and distribution as constraints on agricultural development

Abdelmagid Ahmed Mohammed & Sayed Ali Fadul Elmola Zareba & Salah Masry
Mohammed Mahadi

ranging between 30 - 40°C during most of the year and over 40° C during the dry season. (April - June). The rainy season extends from July to October. The dominated vegetation is a varying mixture of grassed and shrubs. Tenchoserve (1987) . Millet is the main food grown for human consumption with sorghum, watermelon, sesame and Roselle (kerkade) grown as cash crops.

Definition and concept of land use:

Known Ajamieh and others (1968) reported that the land is intended to mean a narrow limited soil, the layer located above the rocks of origin and supplying the plant with its needs of food, however the economists expanded it to include soil properties and characteristics of the place such as location and the degree of fertility, livestock, this definition was considered insufficient by some other economists, who Expanded again to include all the land of the natural environment.

Indicates Akil (1972): report 1 that the land is a specific area of the Earth's surface with a strong natural processes or natural factors. However Hassan and others (1973), cited that the earth is the Roman upper class Almjoah of the solid crust of the Earth.

According to 1925 law of the land settlement and registration, the word land include all the benefits rising from land and buildings and things fixed permanently on the ground, it also includes share common ground and also any interest in the land require registration under this law or be subject to such registration other than the concession, it also includes the right to

cultivate part of the land to be a certain or determinable although the location may change from year to year.

The term land use is one of the modern terms that appeared in field of scientific research and has many different definitions around Researchers. Tony (1960) reported that the land use of the terminology is relatively new and has gained special significance in social, economical geographical aspects include land surveying and add to the models or types each of which represents the interaction of natural factors.

According to the Chorley & Kenndy, quoting Abdul Rasool (1995) reported that term of land use includes all the permanent or renewed in the intervening rights of exploitation on their needs in order to meet the physical or spiritual or both of the resources of natural or man-made resources.

El Sherei (2001) reported that the use of the land as a set of sequential activities, which aimed to organize communities through the study of the relationships patterns of human and store functions.

In the common sense, the term of land use has many meanings, but usually indicate that the methods of land use in different areas, agricultural, pastoral and forest resource exploitation and construction, mining, industry and other activities that serve the goals rights.

The study of land use of the most important aspects in the agricultural geography which in term of a branch of economic geography, in spite of the fact that agriculture has been and still account for most of the Land Escape exploited by man for thousands years, the land use as an area of study has emerged too late.

Land tenure and distribution as constraints on agricultural development

Abdelmagid Ahmed Mohammed & Sayed Ali Fadul Elmola Zareba & Salah Masry
Mohammed Mahadi

Banna (2003) pointed out that the term of land use is expressed in English Land Use or Land Utilization, For example in the fifties of the twentieth century looked at the difference in the first term is the concept of a formal relation to fundamentalist principles, While the second concept and the functional performance (practice). the distinction between the two terms are not universally accepted and used as a concept and remained one however Britain and the United States preferred the second term.

Herbertson (1905) in his search of the regions and use of environment and adopted heavy data about the natural environment and vitality, never the less it lacks the human use of economic and environment.

See International Organization for Food and Agriculture that the planning, land uses, a systematic evaluation of structured land and uses the list as well as natural factors, social and economic manner that will assist land users to choose the patterns of use sustainable to increase production so as to meet the needs of the population preserving the environment. (Ghoneim, 2001) .

The relationship between the human factors and the land:

Human dimension that determines the course of human control and capabilities at the heart of the man who uses the land and face challenges and obstacles to slow the natural benefit, it is natural that this human dimension is different from person to another regarding capacity and efficiency in relation to land use control, the consequences of this difference in methods of addressing diversity and potential superiority of the outcome of this use (Shami, 1971).

It is not strange that such diversity reflects the real interaction between the Earth and human characteristics, and abilities, repetition, , and also it is not surprised that the interaction determines the overall shape and craft to land use, grazing, animal husbandry, mining or mineral production, however, each type of use is response of specific characteristics of the regions, and addresses some degree of checks and challenges: As the result the human setting world achieve the balance between the rights and possibilities of its capabilities and production sleeve and its kind. Is it fit traditional agriculture production mechanism and the production of high-end modern agriculture? Does the setting the human critical and decisive control of the human? There is no doubt that the difference of non-economic use would be dependent upon man's ability to respond to the controls on the natural and optimal performance so as bear the responsibility for this difference. (Freedman, 1968).

As emphasized by Robert Wilson and Ostonr (1971) the changes in the type and shape of the earth always occur when the land use rights to meet his needs of life, Man always seeking for positive interaction between him and the earth, who will benefit first and foremost its bid, the more than human control to rein in the natural controls and put them to his advantage - especially in dry areas - than in the human use of the land was used optimally. (Shami, 1971).

Literature Review:

Despite the abundance of research and studies on the North Kordofan State in general and a locality of Bara in particular - in different areas - no scientific research adequately address the issue of land use in the region, all that exists is a study focused on the elements of the natural environment,

Land tenure and distribution as constraints on agricultural development

Abdelmagid Ahmed Mohammed & Sayed Ali Fadol Elmola Zareba & Salah Masry
Mohammed Mahadi

including aspects of climate, soil, geological structure, vegetation, aiming to identify potential natural and water resources available in the region, and the most important studies and researches that reported by the researcher:

- According to Eloshary (1993) reported changes in land uses and their impacts on local Shikan - Kordofan state, the study aimed to identify the features of rural economic activity and social conditions and changes that occurred in the study area, it also aimed to identify the magnitude of change in land use that stand on the rural aspects of the features of rural economic activity and social conditions prevailing in the region. More over it studies the historical method, descriptive and statistical analysis. The study concluded that there is a range of natural and human factors contributed to varying degrees of overlapping in the land-use change in the local Shikan.

- Rahamt Allah (1999): reported that land use in agriculture, both vegetation and livestock are the most important patterns of use, he added that there are some changes in land use at the end of the last century due to increase in population and use the machine in the agricultural sector, which led to the horizontal expansion in the agricultural areas at the expense of natural vegetation that prevailed in the territory of the valley. The study also showed that the change in land use and poor agricultural certain transactions led to the deterioration of soil fertility and leading to low productivity year after year. The study identified different aspects to understand the problems facing the use of the land used optimally, and made some suggestions that re-planning of land use area is the most important, along with building and maintaining soil productivity characteristics as well as environment suitably.

- On the other hand Abdul Aziz (2002) reported; the vulnerability and poverty in rural communities - in Bara, revealed that there is a difficult overlapping factors including the separation and identification, contributed in varying degrees is the natural factors, economic and social. He revealed also that the fragility and vulnerability of different levels can be created in any society, while the sum represents the final extent of weakness and the deterioration of living conditions and shaken in the structure of natural and human systems prevailing among the population.

The study pointed out that the degree of negative impact of the ecology, economic and social challenges In addition the ability of residents to innovation mechanisms adaptation of the human can restore society to a formula before the crisis, according to the severity of the consequences and deterioration of unit.

- Another work carried out by Mohamed (2001) for use of the land in the province of Elbotana. Concluded that the lack of water was the main reason that leads to traveling during the planting period, leading to overlap and clash between farmers and herders, however the narrow paths and the lack of irrigated agricultural projects lead to interference, in addition to the lack of boundaries between the agricultural areas.

Materials and research methods

Research community is composed of farmers in Bara locality. The work designed to identify the subject under study and distributed to samples of 146 farmers from four villages namely Um Asilha, Gireggikh, El- Bashiri and Alcakamotah using simple random manner.

Data was collected and analyzed using the Statistical Package for Social Sciences (SPSS) program. to obtain results from which to make sure

hypotheses research, used in the analysis of frequency tables as well as to test hypotheses of the study through the application of test (chi-square) and scale factor pairing to test the independence between the variables. Relational ties between the research variables were studied using the test (chi-square) to determine the presence of significant relation between them, one of the tools that are used to measure the concordance between the two Mean actual measured values and the other theoretical. (Abu Aish, 1984).

Statistical chi - square calculated by the equation:

$$\chi^2 = \sum \left(\frac{O_i - E_i}{E_i} \right)^2$$

Where:

O_i = repetition scenes, E_i = expected frequency.

We reject the null hypothesis that there is a relationship between two variables if the moral level of less than 0.05% was used for the independence of two variables statistical phi, which is known as the Cramer Coefficient C and tables that are used with the pairing (2 * 2) is calculated as follows:

$$C = \frac{\sqrt{\chi^2}}{N(L - 1)}$$

Where:

N = sample size and L the smaller number of rows and columns in the table of compatibility, where the use of χ^2 statistic to test the independence degree of freedom (r-1) (c-1) which is equal to the measure of association.

Results and analysis:

Basically the study used two hypotheses intended to identify the impact of social situation on the policy of land reclamation at Bara, North Kordofan the purpose of analyzing the social status of the research sample.

Given the data table 1 we find that 42.6% of males less than the size of land they have than 20 pentacle of which 20% are not married, 75% married, 1.5% divorced and 1.5% widowed, 57.5% of whom 88.9% are married and 11.1% singles.

Through the table 1 as well as the 69.2% of women own agricultural holdings of less than 20 pentacle whom 94.4% were married and 5.6% are not married, while those who exceed the size of 20 possessions pentacle 30.8% of whom 62.5% were married, 31.3% were unmarried and 6.3% widowed.

Table 1 statistical relationship between marital status and land use (size of the acquisition of land ownership)

Table (2) demonstrate the result of the test of the null hypothesis that there is no relationship between marital status and size of the acquisition of

social status * land size * gender Crosstabulation

Count			land size			Total
gender			less 10	bet 10-20	more 20	
male	social status	single	5	3	6	14
		married	13	17	48	78
		divorced	1	0	0	1
		widowed	1	0	0	1
	Total		20	20	54	94
female	social status	single	1	1	5	7
		married	21	13	10	44
		widowed	0	0	1	1
	Total		22	14	16	52

agricultural land against the alternative hypothesis that there were a relationship between marital status and size of the acquisition of agricultural land using statistical Chi-square with degrees of freedom $(r-1)(c-1)$ where r represents the number of rows and c the number of columns and by the following formula:

$$\chi^2 = \sum \left(\frac{O_i - E_i}{E_i} \right)^2$$

Where O_i is a repetition scenes and E_i represents the frequency expected was the value of the statistics for males 10.307 and the value of p-value = 0.112 < 0.05 and therefore we reject the null hypothesis the level of significance of 5% of any relationship exists between marital status and size of the acquisition of agricultural land for males.

Table (2) the measure of association for males = $\sqrt{\chi^2/n} = \sqrt{10.307/94} = 0.331\text{phi}$

From Table (3) that the value of p-value = 0.112 for males indicate the level of moral significance pairing 5%, where χ^2 is used to test the statistical independence of degree of freedom $(r-1)(c-1)$.

The value of the statistical table for females (8) and the value of 9.068 p-value = 0.059 > 0.295 and thus we reject the null hypothesis significance level of 5% there is any relationship between marital status and size of the acquisition of agricultural land for females.

And that the measure of association for females =

$$\sqrt{\chi^2/n} = \sqrt{9.068/52} = 0.418\text{phi}$$

The value p-value = 0.418 for females Table 3 refers to the moral level of significant association with use of 5% χ^2 statistics to test the independence degree of freedom (r-1) (c-1).

Table (2) statistics is measured by (chi-square) of the relationship between marital status and size of tenure

Table 3 statistics (phi) of the relationship between marital status and size of tenure

Symmetric Measures

gender			Value	Approx. Sig.
male	Nominal by	Phi	.331	.112
	Nominal	Cramer's V	.234	.112
	N of Valid Cases		94	
female	Nominal by	Phi	.418	.059
	Nominal	Cramer's V	.295	.059
	N of Valid Cases		52	

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

The results implied that the test of the efficiency of land tenure system and land use inequality among farmers is due to many economical, social and environmental factors in North Kordofan State do not behave as predicted by the chi square analysis; among which the recent neglect of the government to traditional rain-fed subsector is the main factor that make agriculture performing below its potential in recent years. The unstable weather conditions led the majority of farmers depend on fluctuated rainfall for crop cultivation and land degradation. In fact, agriculture can contribute significantly to rural household food security and poverty reduction three times or more than any other sectors do. Thus combating overall farmer food production in general and poverty in particular, requires policy interventions that consider the variation among farmers for eliminating the existing inequalities and boost farm output. However, this result may be taken with caution given the fact that in reality many existing conditions

Land tenure and distribution as constraints on agricultural development

Abdelmagid Ahmed Mohammed & Sayed Ali Fadul Elmola Zareba & Salah Masry
Mohammed Mahadi

support the factors of production behavior. Generally, it is not always easy to document the existence of unused land in the rural sector, the question of under- and overutilization of land is even more difficult, but important. The data above suggest that many small holdings are being utilized beyond what can be considered a rational degree of intensity, given the steep topography and the need for permanent vegetation cover over considerable areas of these farms. Both producer education and alternative employment will be necessary to reduce this pressure on the ecosystem

References:

- Abu Ayyash, Abdullah (1984): Statistics and computer data processing applications with geographic, agency publications, Kuwait.
- Abdel-Maksoud, Zine El Abidine (1974): dry areas - a study in the development of rural land use - Arabic geographical magazine - Issue 87.
- Abdul Aziz, Elamin El-Sheikh (2002): environmental and economic impacts of the change in land use patterns (Master translator), University of Khartoum.
- Abdul-Rasoul, Ahmed Abul Qasim (1995), a study in patterns of land use, search for the Master's degree, University of Khartoum.
- Assaf, Saleh Mohamed (1409 e): the entrance to research in the Behavioral Sciences, Riyadh, Obeikan.
- Aqil, Abdel Fattah Mohamed and Mohamed Fouad Elsaqqar (1972), geographic resources, production, plant knowledge, Alexandria.
- Ajamieh, Mohammed Abdul Aziz and Al-Fateh Mohammed Akil (1968), economic resources, House of the Egyptian universities for printing and publishing, Alexandria.
- Banna, Ali Ali (2003), Physical Geography (content - development - methodology), House of the Arab Thought, Cairo.
- Eloshary, Rasha Ahmed Mohamed Ali (2009): Changes in land use and its implications - a practical study in a local Shikan the state of North Kordofan, unpublished research for a Ph.D., Omdurman Islamic University.
- Freed man (1968), t.w (1958): Geography and planning , London
- Ghoneim, Osman Mohamed (2001), land use planning, rural and urban, Safa House for Publishing and Distribution, Amman.
- Mohammed, Umm Hani Faki Mohammed (2001): Land use in the province of Elbotana a case study overlap the agricultural and pastoral research Master's degree, Omdurman Islamic University.

Land tenure and distribution as constraints on agricultural development

Abdelmagid Ahmed Mohammed & Sayed Ali Fadul Elmola Zareba & Salah Masry
Mohammed Mahadi

- Rahamt Allah, Elbaqir Sheikh (1998): Land use in the dry state of the river valleys of the Nile research Master's degree, U of K.
- Shami, Salah al-Din Ali (1971): Geography support planning, facility knowledge, Alexandria.
- Sharii, Ahmed (2001), the principles and applications in geography, House of the Arab Thought, Cairo.
- Tony, Joseph (1960), Glossary of geographical terms, the Arab Thought House, Cairo.
- The laws of Sudan - 1910 -1925, Vol 1.