

Al Sagia: A Masterpiece of
Technological & Socio-economic Development

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Introduction

This brief contribution is intended to present certain aspects of *al sagia* in Sudan through highlighting its history, position and role as a major component of intangible cultural heritage in Sudan . Although this presentation, in its present form, is not considered as a document to be presented to Unesco in conjunction with the candidature for the Masterpieces of the Oral and Intangible Heritage of Humanity, yet it is hoped that it will elicit feed-back and enlightened opinion from experts involved in intangible cultural heritage. Thereafter, it may be developed into a proper candidature file on the basis of the standard model which is set for this purpose, and that includes:

- (a) Identification
- (b) Description
- (c) Justification
- (d) Management
- (e) Documentation

Likewise, it will also take in consideration the main parameters specified in the Unesco Convention for the Safeguarding of the Intangible Cultural Heritage, namely: identification, preservation, promotion, enhancement and revitalization. However, this presentation will focus on *al sagia* as an integrated technical, socio-economic and cultural system which is based on oral and intangible heritage, and that enhances human values.

Identification & History:

The geographical location of this study is the riverine parts of the northern and central Sudan, especially within Nubian and Arabized Nubian communities, whereas, its subject matter is *al sagia* as seen through oral and intangible cultural heritage and as influencing such heritage . The English equivalents of the Arabic word *sagia* is the waterwheel. If translated literally from Arabic into English it means” that which supplies water” or “ irrigates”. The Nubian term for *sagia* is *eskale* in middle Nubian dialect and *Koletod* in Dongolese and Kanuzi.

The word *sagia* does not refer only to the machine i.e. the waterwheel which lifts up water. It also means the farm or plantation irrigated by such machine. Moreover, it also refers to a neighbourhood or settlement inhabited by certain people. In this sense it is referred to as a place name, usually derived from the name of a notable person, family , or tribe that owns the *sagias* in that area.

Historical studies indicate that *al sagia* must have been introduced into the Sudan towards the end of the Roman period. P. Shinnie states that it was introduced during the Meroetic period (Shinnie 1967). The prosperity which Nubia enjoyed between the second and the fourth centuries is attributed to the wide use of *al saqia* , the extension of irrigated cultivation, and thereafter, the resulting economic and social development. The Nubians spread this innovation to various parts of the riverine Sudan, especially among neighbouring groups such as the Shaigiyya. Simple devices which were used in irrigation before the introduction of *al sagia* did not allow cultivation on wide-spread basis. Academic speculation directs us to hypothesize that the movement of Mahas Nubians into the region of the present day Khartoum could have been behind the

introduction of *al sagia* into that region. However, such hypothesis merits further investigation.

In order to illustrate the tremendous stretch of land irrigated by *sagias*, we refer to Burkhardt's statement, which was also confirmed by Abu Salim, indicating that approximately six to seven thousands *saqias* were operating across the area between Aswan and Halfa (Abu Salim ١٩٨ :٢١٠).

The sagia as an Appropriate Technical System:

As a technical system *al sagia* revolves around the basic principles of mechanical engineering. However, this machine is not made of metal. It is made of wood and ropes, which are abundantly available within Sudanese environment. Moreover, it is not operated by diesel or electricity as local inhabitants were either not familiar with such sources of energy, or because they were not easily attainable.

Instead, *al sagia* was driven by oxen. It was manufactured, operated, repaired and maintained by local expertise based on indigenous technical knowledge (ITK) and intangible heritage.

The main technical device on which this system is based is in the form of two wooden gear wheels (a horizontal wheel and a perpendicular wheel). When their teeth of the latter. The horizontal wheel is driven by oxen moving in a circle, thus, causing it to revolve around. Its teeth touch the teeth of the other wheel and move it in a perpendicular manner. Empty water pots or buckets (*qawadis* sing *gadis*) attached with ropes are moved townwards along a wide circular well *mettar* till it reaches the water level. The longitudinal movement of the wheel and the weight of the pots dips the pots into the water, and accordingly they are filled with water and continue their movement upwards. When the waterpots (*qawadis*) reach the ground

level, water is emptied into a basin and runs through a gutter and steams into the plantation.

Sagia community as an Intact Social System:

Manufacturing operating, financing managing, servicing and repairing a *sagia* was a communal affair. To begin with one man could own many *sagias* if he was rich enough, whereas many men could share one *sagia*, each of them determining his share according to his financial capacity. If they could not even share one *sagia*, they could rent and hire eg. hiring oxen to drive the *sagia* and paying the value, which is agreed upon and fixed by the whole community at the end of the season after sharing the harvest.

The technical and administrative staff of *al sagia* include:

- (a) **al samod** : The chief administrative and agricultural supervisor. He is competent and knowledgable in farming, therefore he is authorized by the owner to manage all the affairs of the *sagia* on his behalf. Sometimes the owner himself shoulders this responsibility.
- (b) **al ingib** : The **samad**'s deputy
- (c) **al basir** : The skilled technician who manufactures *sagias*. He is a highly qualified carpenter. He is also responsible for the repair and occasional maintenance of the *sagia*. Every **basir** is entrusted with maintaining a number of *sagias* within his neighbourhood for a

certain share of the crop at the time of harvest.

(d) **al torbal** : The farmer who works in the plantation or farm. Most of the workers in the *sagia* (i.e. the plantation or plot) fall within this category.

(e) **al erwatti**: The *sagia's* driver. He is usually a young boy who urges the oxen to keep moving, often by continuous whipping, so that the gear wheels are moving constantly and water keeps flowing.

The introduction of the *sagia* and the nature of communal labour required by its operation necessitated that people organize themselves into occupational social groups. They spent most of their time within the premises of their *sagia* or *sagias*. They were quite often share-holders and business partners similar to those enlisted in business organizations in contemporary civil societies. In many instances members of the *sagia*, or group of *sagias*, were genealogically related. In this way the *sagia* acted as the basis of a closely inter-woven socio-economic group. This was often coupled with common identity and cultural heritage. It is also noted that despite the sense of equality prevalent among Sudanese, the introduction of the *sagia* brought along a system of social stratification within the community. The **samad**, **basir**, **torbal** and **erwatti** which were mentioned earlier constitute a hierarchical system.

In order to indicate clearly the significance of *al sagia* as the basis of social system, we refer back to the three meanings of the term "*sagia*" mentioned before, one of which is the social "unit" or group (*hilla*) i.e. neighbourhood which constitutes part of a village. Thus every neighborhood is a *sagia*, and the name given to the neighborhood is the

name of a certain *sagia* . Moreover, its inhabitants share a common identity and very close social and sentimental association with that specific place and its people(M.I. Abu Salim ١٩٨٠:٢٩٤).

The *sagia* as the basis of Time Management

The introduction of the *sagia* led to a well-established and strict system of time management, such system is closely related to the organization of communal labour discussed above. Time management on the basis of *sagia* operation includes the division of the day into two working shifts i.e from mid-noon to mid-night and from mid-night to mid-noon. The second feature of time management is the division of the year into months namely the Coptic months which have been used in this region for centuries, and that constitute an indispensable component of traditional Sudanese culture. The third feature is the division of the year to three seasons: summer, flood and winter, which are actually seasons for the cultivation of different sorts of crops. Almost all members of the community, which is basically a farming community, are directly or indirectly, affected by this strict system of time management. What is more significant is that such system establishes order between members of the community.

The *sagia* in performing Arts and oral Literature:

The *sagia* was the subject matter and source of inspiration for traditional performing arts and literary folk genres eg.folk songs, proverbs, folk dances and traditional popular narratives. As an example of such proverbs, we refer to “Juha’s *sagia* which draws water from the river and pours it back into the same river” which is used in folk wisdom to refer to futile action. Narratives about Nile mermaids are often told and disseminated by *sagia* workers operating night shifts. Folk songs echo and

stress socio-economic values related to *sagia* community eg. "the squeaking sound of the numerous *sagias* of the beloved's father awakens those who were fast asleep". This is an indication of affluence and social prestige.

Enhancing Popular Beliefs, Religious & Human Values:

With the *sagia* and continuous and close association and accordingly with cultivation and farming is supposedly ascertained by burying the newborn's afterbirth under the wheels of the *sagia*. It is notably believed by various Sudanese that individuals are linked up physically and spiritually to places where their afterbirths were buried. From that early phase onwards, a number of ceremonies and practices aim at enhancing social, religious and human values. Among such practices is the *nafir* (system of communal labour) which aims at enabling members of the community to become partners in fortune as well as in misfortune. Another manifestation of religious and human values of the *sagia* community is putting aside a certain portion of the crop (in the form of alms) to be distributed to the needy, or given as gift to holymen who also accommodate and feed those in need.

From *sagia* community to Date Palm Culture:

One of the direct results of the use of the *sagias* on a wide scale is the abundance of date palm plantations and date palm trees in the riverine regions of the northern Sudan. The date palm tree became an important source of food, fodder, drink, shelter, fire, light, tools, household utensils, as well as cash crop. No wonder that it became a main cultural theme for farming and agricultural communities just like the camel for Bedouin desert communities. Beside date palm trees, *al sagia* was also the main factor in making it possible to grow other fruits and various kinds of

vegetables, beans and cereals. It supported life, and quite often it helped in achieving abundance and creating a sense of affluence.

All the above factors are directly responsible for creating an atmosphere conducive to enhancing human values. Among such conditions the following can be mentioned:

- (a) Work for everybody
- (b) Food for everybody
- (c) A place for everybody within the community
- (d) Social security for everybody

Those factors promote self-reliance, self-esteem, sense of pride and sense of dignity.

Plan of Action:

- ١- Collecting available literature about the *sagia*, especially the *sagia* along the Nile Valley.
- ٢- Recording and documenting traditions related to the *sagia* eg. Craftsmanship, literary texts, artistic texts, linguistic terminologies (particularly those in endangered Sudanese language).
- ٣- Revitalizing *sagia* heritage by preparing video-tapes and inter-active C.D.s.
- ٤- Building *sagia* parks in different riverine cities as cultural re-innovation and tourist attraction.
- ٥- Introducing and promoting the *sagia* in educational material and in the mass media at the national level.
- ٦- Publicizing and promoting the *sagia* internationally through candidature for the masterpieces of Intangible Heritage of Humanity.