Agriculture in Africa

This chapter will attempt to map out the history of agriculture in Africa, partly building it around Charles Darwin's firm belief that Africa was a continent out of which emanated very important technological inventions and innovations which is rooted in the earliest histories of mankind. During the 20th century certain scientists developed theories which centred upon the core belief that modern day agriculture has its roots in Africa and was invented in Africa.

Settled communities in Africa began to be developed in at least 20,000 years BC. Quite probably these communities first sprung up along the River Nile in the cataract regions of southern Egypt and northern Sudan or as it was once known Ancient Nubia. Archaeological historians believe that barley was been harvested as early as 16,000 years BC. The people living in these established and settled communities had the skills and capabilities to use wild grain as well as the ability to exploit water resources and were able to form stable and long lasting communities. The domestication of plants and the building up of livestock herds also led to the emergence of aesthetics, individual taste, discrimination as well a language. Modern day African language has its foundations in these small and settled communities established thousands of years previously. The beginning of modern day history can be partly marked through the introduction and development of agricultural systems.

It is believed that the origins of domestic cultivation and herding has its roots in the years between 11,000 years BC and 3,500 years BC. During this period the climate in Africa was much wetter and the height of this wet period occurred between 9000 years BC and 6000 years BC. The Sahara desert was transformed into a fertile grassland steppe with savanna woods around the entire region with rivers cascading down all the time from the mountains and where Lake Chad was an enormous inland sea. These environmental changes in the Sahara which happened at the end of the ice Age enabled the population to grab the opportunities that these changes bought. During this period innovative farming methods were introduced and developed in Africa as well the domestication of plants and animals.

The domestication of animals in north east Africa could have happened at a similar time as in south west Asia. Along the upper Nile and in Sudan hunting and fishing communities had been working in a loose partnership

since around 7000 years BC. They manufactured and used stone and bone tools as well as pottery. But the foundations of these communities could go back to much earlier time of 15,000 years BC. By that period the Nile Valley was a rich source of food. There was an abundance of wild game, grains, animals and fish and later on wild fowl. Along coastal regions shell fish was a valuable source of food. Permanent communities in sustainable locations were formed. Effective methods were devised for storing food. Smoking and drying techniques were developed and as a result of improvement to nutrition population growth occurred. Also a range of millet and dry rice was grown in West Africa at this time while sorghum was grown in Chad and Sudan. Yam and palm oil quite possibly could have been cultivated at a much earlier period. Communities could have been based around the movement of wild game and the seasonal harvesting of wild crops.

Western and Central Sudan has a history of successfully cultivating specialized crops. It is thought that the camel was introduced into Africa before the birth of Christ and some historians claim that the horse has its origins in Africa and that the donkey was first domesticated in north east Africa. Other people claim that cattle were first domesticated in the Sahara region because rock paintings have been found that show people with cattle. A grain of corn has been found in this region which dates back to 19,000 years ago give or take 300 years. This is thought to show proof of the early domestication of grass at a time when Asia Minor and West Asia were covered in ice. One also has to take in the role of birds when considering the origins and development of agriculture. They might have helped to promote plant growth across a region by dropping seeds over a wide area through their digestive system. Tuerag traders may also have taken new plants, seeds and trees along early trade routes and planted them en-route.

Research by Patrick Munson of Illonois University where he excavated ruins in the Tichitt Walata region of Mauritania and found an early agricultural community which dates back to between 1500 Years BC and 1100 Years BC. Most of the villages were built on the top of cliffs and were made of stone. The walls of the cliff plus a series of protective walls help to protect the villages. Some of these communities covered an area of 1 square kilometer. Munson believed that they could have been food producing as well as food gathering communities. Some of the communities were constructed alongside lakes and could have been home to fishermen, herdsmen and horticulturalists.

The beginnings of livestock rearing, animal husbandry and grain cultivation could have occurred in the Sahara Desert when it was fertile savanna grassland and teeming with wild life. Animal husbandry and the domestic rearing of cattle occurred in the Sahara Desert region of Africa before it happened in the Nile Valley. Cave paintings have been found in this desert region depicting the herding of cattle. Since the start of this current millennium agriculture was seen as happening in the Sahara region as early as the 7th millennium BC. Pottery and ceramics are also linked to the development of agriculture. Pots were produced for specific purposes such as sowing, harvesting, growing plants in, for eating and drinking, all activities linked to agriculture. The greening of the Sahara Desert came to an end with ending of the last Ice Age. As the ice slowly melted in Europe and the Near East the region became more arid and was transformed into the desert region that we know today. Some pottery and rock paintings still remain from this period, which depict life as it was lived at the time.

The Senegalese scientist Cheikh Anta Diop firmly believed that Egyptian cultures had their origins in the western Sahara region. He also believed that some Senegalese agricultural knowledge was then spread throughout the entire Saharan region. He also noticed certain similarities between the rock painting found in the Sahara and that of Egyptian pictograph writing. Other research indicates that Egyptian agriculture has its roots in southern Sudan as well as in communities located around Lake Chad.

David W. Phillipson says,

"Shortly after 12,000 years there was a remarkably return to better watered conditions, increased run off from the highlands, coupled with higher rainfall and decreased evaporation resulted in a return of a regular flow of water to long dry wadis, the great enlargement of existing swamps and lakes, notably Lake Chad and the formation of new ones….. There were corresponding changes in vegetation and the distribution of wild animals…. The reason for these substantial changes are not yet fully understood. One of their most puzzling features is the rapidity with which they took place: the lakes appear to have reached their maximum height as early as 11,000 years ago."

(Phillipson 1985)

N.I. Vavilov, the Russian plant paleontologist, who was one of the victims of Stalin's many purges, dying in a Russian labour camp during the 1940's, through his intensive research came to the conclusion that there were possibly 5 places on the African continent where plant cultivation could have started. These 5 places were Ethiopia, the Niger bend, the Sahel region, Gambia, the Equatorial zones and the Zambesi River. He was also the first academic to reject 'the diffuse theory' which states that all African history has its origins in Egypt before spreading southwards into the Sahara and then into the rest of Africa. Writing in the 1920's he says,

"The Sahara carries more agricultural history than Egypt."

N.I. Vavilov was also of the opinion of the importance of Ethiopia as *'a zone of agricultural origin.'* He reached this conclusion from his study of two plants; ensete and tef which are only found growing in the Ethiopian Highlands.

The Nilo-Saharan people of Central Sudan emulated the way their Afro-Asiatic neighbours collected grain. Wild sorghum was domesticated and cultivated. Pottery vessels able to store grain and to carry water were created at the same time. Some where between 7,000 years BC and 5,000 years BC, pearl millet, gourds, melons and a variety of beans were cultivated domestically. This agricultural expertise spread westwards across the southern regions of the Sahara.

By 3,000 years BC an agricultural base in West Africa had been established. I.H. Burkhill believes that the West African forest savanna region was the birth place of yams and that quite possible this could date back to some 5,000 years ago. Burkhill also believed that not one single place can be designated to where yams originated from and became domesticated. This process would have been spread over many generations before the yam that we know today would have been produced. The farming generations involved in this process would have been like 19th century pioneers travelling across the American prairies. They were literally breaking into new frontiers of knowledge which have helped to lay the seeds of today's modern society. With the development of agriculture followed by trade, this newly acquired knowledge would have been slowly propagated along these newly formed trade routes which eventually stretched into Europe and right across Asia as far as China and Japan. The creation of forest clearings in West Africa for agricultural use is also linked to developments in the use of

iron and axes. Though many of these clearings could have been created with stone axes and in certain rituals connected to yams, the use of iron tools is forbidden.

There is a possibility that the domestication of yams occurred even earlier then Burkhill has stated. Some historians say that the domestication of yams happened 15,000 years ago in Polynesia and in Africa and that the relationship between mankind and yams marked an extremely important stage in the evolution and diversification of the ancestors of African people. Coursey writing in *'Origins of African Plant Domestication'* places this time line at around 10,000 years ago.

By 5,000 years BC, Niger-Congo speakers in West Africa had expanded the number of plants that they cultivated and harvested. They grew crops of raffia, oil palm, palm, peas, groundnuts and kola nuts and by this period had also domesticated guinea fowl. African rice started to be grown in the Niger delta region, when the climate changed and started to warm up and become far dryer as a result of the ending of the last ice age around 3,000 years BC. Around this time woodlands, forests and rainforest regions of West Africa and in the Congo Basin were been cleared with the aid of polished stone axes designed specifically for agricultural purposes. At a time when periods of heavy rain fell in this region many fishing communities existed beside the many rivers and lakes which were formed at this time. The area from Lake Chad through to the Upper Nile and down south to Lake Turkana and the Great Rift Valley in East Africa was home to large groups of fishermen who made a living by bartering dried fish for grain and other products from the different communities based in their area.

Iron was used in West Africa for tools and for weapons. This advance enabled more land to be cleared for agricultural purposes and for hunting skills to be improved and to become far more effective. Boaz believed that Africa had either adopted or actually invented the art of iron smelting, at a historical period when Europe was still living in a Stone Age world. The use of metal was vital in accelerating agricultural development as well as paving the way for industrialization and W.E.B. Dubois in *'The Negro'* says,

'Long before cotton weaving was a British industry, West Africa and the Sudan were supplying much of the world with cotton cloth.'

This ability to grow cotton and supply many countries with cotton demonstrates the agricultural skills that Africa already possessed prior to the Atlantic slave trade and European colonization. These skills had been developed across successive generations over many of thousands of years.

The history of bananas is another example which further illustrates the innate agricultural skills which existed on the African continent. The growing and cultivation of bananas is a very intensive process. The recent unearthing of banana phytoliths in Uganda may cause the beginning of agriculture in equatorial Africa to be put back to at least 5,000 years ago. Several banana phytoliths have been found in sediment carbon dated to over 5,000 years old. This puts into question the historical belief that bananas were first introduced to Africa along the east coast of Madagasca and that were in actual fact plantains and not bananas. Other people subscribe to the view that bananas reached Uganda from New Guinea in the mid to late 4th millennium BC. If this was proved to be true it would illustrate the possibility of trade and cultural links between the east as well as proving that the people of that time possessed the skills and ability to accurately navigate vast distances across oceans. Some historians link the arrival of bananas on the shores of Africa with Suaheli merchants. Bananas may have reached Africa via Malaysia and through the island of Madagasca. This could also be linked to the early ivory trade which was in existence 2,500 years ago. It was the ivory trade which first gave rise to the Suaheli culture.

Bananas were used as a source of cattle feed and this practice still continues in some parts of the world. In Jamaica the banana tree is an integral part of the landscape and its roots stem all the way back to the African continent. With the introduction and propagation of the banana tree, herdsmen were able to expand their herds of cattle because they had access to a regular supply of cattle feed.

Early farmers in Uganda realized that certain flowers after blossoming produced small fruit instead of buds. Through cross fertilization experiments which took place over a number of successive generations, these ancient farmers developed and produced the cooking plantain which today is a staple food within African and African-Caribbean culture. As previous stated this one plant has also shaped the landscape in Africa, in the Caribbean and Central America. Bananas were added to millet as a staple food for sea faring vessels and it is quite likely that bananas reached the Indian sub-continent from East Africa. The diet of these sailors was far

healthier then their European counterparts where scurvy caused by a lack of Vitamin C was common until the 19th century.

This introduction of bananas as a staple food on merchant vessels was another reason which allowed trade to expand. By the 5th century AD there was a flourishing international slave trade. Many of these slaves in this west to east trade originally came from Uganda. Writing in the 18th century, A.M.H. Sherif a historian at Baghdad University wrote,

'Early 1200AD there was no noble place in China without black people.'

1. Other plants introduced to Africa via the Indian Ocean were coconut, sugar cane, rice, colocasoia and water yams. Chickens were also introduced to Africa from south-east Asia. Skeletal remains of chickens have been found in the Sahara in Djenne-Jeno and at the Machaga Cave in Zanzibar which date back to the first millennium BC. Crops which have their origins in Africa are also to be found in south-east Asia. For example crops like pearl millet, sorghum and cow peas. Pearl millet reached south-east Asia around 2,000 years BC but this date could be even earlier. Sorghum arrived in Korea around 1,400 years BC and cow peas which originated from either southern or West Africa were cultivated in Korea around 1,500 years BC. This is indicative that there were established links between south-east Asia and Africa during this time and that there was an active exchange of ideas and products. Two thousand years before the Roman invasion of Britain a flourishing agricultural base and sector was been formed in Africa with established sea and overland links between Africa and the Far East.

2. African rice (Oryza Glaberrima) was first thought to have been grown in West Africa 1,500 years ago, many years before the introduction of Indian rice (Oryza Satwa). It is possible that African rice was first grown in the flood basin of the Central Niger River and that pre-historic Africans transported it westward to Senegal and south to the Guinea coast and east to Lake Chad. The International Rice Research Institute (IRRI) has estimated that rice was domesticated in Africa around 6,000 years BC, though it is only recently that proof of an African strain of rice has come to light. African rice is hardier and more resistant to disease than Asian rice.

For over a century during the height of the trans-Atlantic slave trade, the USA state of South Carolina was a major rice producer. There is a distinct possibility that African rice was grown in this state during this time and that

some African slaves working the plantations may have been extremely knowledgeable about the niceties of rice cultivation.

3. Farming communities and settlements in the Niger Delta expanded. Many people in this region spoke Mande and they were skilled in the production of dried fish, rice and cotton. Food surpluses were traded in large open markets and the region around the West African town of Djenne the largest trading centre of the area. Rice production also took place in the tidal river estuaries of Guinea, Sierre Leone and Liberia. Salt water was used to eradicate weeds and unwanted vegetable from the farmland while fresh water was pumped in to irrigate the crops. These same agricultural practices were used on the slave plantations of South Carolina. Rice farmers in Sierre Leone growing wetland rice used the Decrue Method for growing their crops as well as a unique mixed cropping system. This method of intercropping has been practiced in Africa for over 6,000 years. This method uses a mix of fonio, millet and sorghum and is thought to have emerged along the Upper Niger or on the Senegal River. 80% of African farmers still use a mixed inter-cropping system and could these methods have been adopted by American plantations during the era of the trans-Atlantic slave trade? Africans also have a huge liking for rice and could this be caused by deeply rooted and very distant memories entrenched in the memories of their ancestors.

4. Pastoralism is an agriculturally based knowledge system which has evolved on the African continent over many thousands of years. Herding is an extremely complex way of life. A herdsman's camp is organized around the basic needs of water, grass and firewood. Animals remain mobile and for the herdsman the household lies at the heart of the operation. The household is a place that the herdsman returns to and is the place where they plan and organize all of their activities. A pastoralist's knowledge about their environment is immense. For example, the Borana people of East Africa have a vast awareness of the herbs, grasses, shrubs and trees that grow in their region and this knowledge is passed on orally from generation to generation. All pastoralists have to be aware about which stones contain salt as cattle need a certain amount of salt each day to survive. Cattle also need to eat specific plants and tree bark in order to remain healthy. The herdsmen must ensure that this is included in their daily diet. Tasks are separated according to gender. Women are responsible for milking. Boys are responsible for certain types of herding. Girls fetch and carry water and are responsible for cleaning and washing their home base. It is essential that

the camp is kept clean to prevent disease and ensure that the cattle stay healthy and strong. Men are responsible for all aspects of herding. It is men folk who decide which grass the cattle are allowed to graze on. Gadnin Dahl says that,

'The people with the highest experience of risk management are the pastoralists. The pastoralists have a tradition of 8,000 years stored in their memories.'

5. The end of the last Ice Age in approximately 10,500 years BC as mentioned previously marked a dramatic shift in the climate and environment of Africa and personally I believe this change in weather helped to lay the foundation stones of modern day agriculture. The Sahara desert was transformed into a lush and fertile green valley. People moved back from the interior of Africa and from the coastal regions. By 5,000 years BC another dramatic change in climate had occurred. There was a dramatic decrease in rainfall and the green Saharan belt began to dry up and revert back to desert. Another mass population shift occurred with a move towards the Nile Valley where permanent and semi-permanent settlements were established. Also there was far less rainfall occurring in the central and eastern regions of Africa and dating from around 6,000 years BC there exists archaeological evidence of domesticated cattle. These domesticated herds co-existed alongside hunter-gatherer communities. In the Sahara and Nile areas there were a range of domesticated animals such as the pack ass and the screw horned goat. It is believed that the cultivation of crops started in the Sahel region around 5,000 years BC. Sorghum and rice were grown at this time and some settlements ad domesticated guinea fowl. The Oxford Atlas of World History says that this accelerated period of climate change occurred in 4,000 years BC. With the lakes and river systems drying up there was a massive expansion of desert regions coupled with a migration of farming communities, some of whom moved into West Africa.

Can the roots of agriculture be traced back to Africa? A number of theories were put forward in the 20th century which believed that this was the case, contradicting the common held belief that Mesopotamia was the cradle of agriculture. G.P. Murdock firmly believed that the Upper Niger was the birth place of agriculture. Critics of this theory say that if this was the case it would be the first time that any culture went from food gathering to food growing without developing a broader cultural base such a the production of ceramics and the construction of towns. Possibly, with the onset of climate

change after the last Ice Age the desert swallowed up these much older civilizations but so far no archaeological evidence has been produced to back up these claims which can categorically back up theorists such as G.P. Murdock who see Africa as the birthplace of agriculture.

Professor Fred Wendorf of the Southern Methodist University, as a result of his research findings, concluded that crops were first cultivated in Africa. He is of the firm belief that this first happened in the Western desert in Egypt at Wadi Kubbaniya where barley, capers, chick peas, dates, legumes, lentils and wheat were grown and harvested. Tools such as grinding and milling stones, cutting blades, hide scrapers and mortars and pestles were found at this site. It has to be remembered that 12,000 years ago the river levels of the Nile were much higher. At times when the Nile receded fish were left stranded in the shallow waters. Traces of ash and charcoal have been found at these sites where the trapped fish were killed and smoked. Crops were planted in the silt and once this had taken place the whole community reverted back to their hunter and gatherer existence. Between December and January crops were harvested and the collected cereals were milled and ground into flour. Gazelles, wild cattle, hartebeest, an occasional hippo, geese, duck and other wild game were hunted and were a source of nutritional food. The Nile would then flood again the following Summer. Links exist between this ancient culture based in the centre of the Sahara Desert and later Egyptian civilizations. Professor N.I. Vavilov's research concluded that the mountains of Ethiopia possessed the highest diversity of plant life in the world. He concluded that Ethiopia was a 5th world centre and believed that Egypt adopted crops from this region as its own agricultural system expanded. N.I. Vavilov describes Ethiopia as been,

'Rich in indigenous plants as well as by its number of species in general.'

Northern African-Asiatic speakers during this period took methods of collecting and growing wild seed into Egypt where pigs and donkeys had become domesticated. This knowledge of seed cultivation was also taken from Africa into the Middle East where in normal circumstances tropical grasses could not be cultivated. Wheat and barley were grown instead and this knowledge fed itself back into North Africa via the Mediterranean. During this period Cushitic speakers, an off shoot of African-Asiatic people took knowledge and methods of animal husbandry, herding and of cultivating grain over all of the Horn of Africa and down through the central

plains of East Africa. This is also indicative of fluid and mobile communities who felt comfortable and able to travel across these vast and sometimes environmentally hostile areas. Valleys adjacent to the Ethiopian Highlands cultivated teff, (a local grain) and enset, a fruit indigenous to Ethiopia and similar to a banana.

The picture of Africa during this period is one where knowledge was shared between communities and was able to move freely around the continent. About 2,000 years BC marks the beginning of the Bantu migration. This massive movement of people continued until around 300 years BC and started from the Cameroon and eastern Nigeria. This migration started by canoe towards the forest regions of the Congo River basin. River communities were established. They cultivated yams and palms for oil as well as being active hunters and fishermen. The southern savanna grasslands of Angola were reached around 1,000 years BC. Around about this time the Great Lakes in East Africa were also settled on. They were skilled iron workers and learned the skills needed to maintain large herds of cattle and to plant and grow grain from the Sudanic and Cushite speaking people of that region. Bantu farmers became adept at growing yams and grain crops. They took the skills involved in working with iron, herding livestock and making pottery in small groups across much of east, central and southern Africa from around 300 years BC to 300 years AD. They also mixed with and absorbed much of the indigenous Khoisan speaking population but the Bantu migration did not reach the south-west area of Africa which has an extremely dry and arid climate.

A number of ancient agricultural systems were developed in Africa. The Firki/flood retreat system was based around the growing of dwarf sorghum (masakwa) and was planted on the flat ground in early October and grown on the moisture kept along the edges of fields. This method was used by the Shuwa and Kanun who lived west and south of Lake Chad. Another agricultural system which emerged out of Africa was the montane which was a form of terraced cultivation. This system was developed by Chadic speakers. One of the purposes behind the Montane system was to prevent soil erosion. They also developed complex systems of crop rotation helping to maintain the sustainability of soil and help prevent it from becoming exhausted of minerals. This system could be found in the Mandora mountains. Agro-Pastoral system was an opportunistic method of cereal cropping was developed alongside the herding of cattle. This method could be found in Central Borno amongst the Koyam, Shuwa and Fulke people.

Yet another example is rain fed agricultural systems on grasslands in savanna belts used by the people of southern Borno.

The Decrue irrigation method is believed used in the growing of crops in Africa is said to be between 4,000 years and 5,000 years old and is thought to have originated from the region of the Niger River Bend near Timbuktu in Mali. Planting begins when the river water starts to recede and to disappear during the annual dry season. The local people use the moisture retained in the soil to propagate new crops. This agricultural system is described in detail in *Decrue Agriculture in Mali* written by Jean Pasquereau and Jack R. Harlan. In the book they state that,

'A decrue crop must mature on moisture stored in the soil. Any device that will speed up the life cycle of decrue crops can be useful. One of the most common is transplanting and sorghum is the crop most handled in this way. Seedlings are established in a bed of sandy soil. As the water recedes and land becomes available the seedlings are uprooted and placed individually in deep dibble holes provided by ramming a stake into the soil. The transplant dibble is 1.5 – 2 metres in length and the holes are often 30cm – 40cm deep. Seen from this angle decrue can be described as a transplantation method with a systematic use of water and moisture, not a sensational act but a rather modest adaption based upon observation – supporting the credo popular in several decades of the 20th century which is 'small is beautiful.'

G.P. Murdoch went against the grain of conventional thinking that saw the continent of Africa as having no past or history except for Ancient Egypt. He put forward the theory that agriculture was invented and that food plants were domesticated in the Mandingo country of the Upper Niger basin. Writing in *Africa: Its People and Their Culture* (1959) he expands on the concept that there was the cultivation and domestication of up to 24 nutritional and fibre plants south of the Sahara. He also raises the question as to whether the Decrue Irrigation System originated in this region and not on the Niger Bend. Also he was convinced that the domestication of cattle first happened in North Africa. Murdoch based his theories through the research he carried out exploring diet plant origins in Africa. Other researchers say that agriculture has its origins at Dhar Tichitt in Mauretania where the Decrue Water System was also practiced.

Arab writers over the centuries describe an Africa plentiful in agricultural produce. Africa plagued by famine and poverty came at a much later date and these could have been partly caused by the massive economic dislocation caused by the slave trade and colonization of the 19th and 20th century. Al-Bakri an Arab writer describes gardens at Awdaghurst, a town on the trans-Saharan trade route as having gardens planted with date palm, irrigated wheat, fig trees, vines, henna and gourds. In the town of Takrur, sorghum and cotton were cultivated. Another Arabic writer called Al Umari writing in 1337 describes Mali's main crops which were rice, wheat, sorghum, yams, kidney beans, gourds, onion, garlic, aubergines, cabbage and shea butter. It is only since the 1950's that many of these crops can now be found on the shelves of British supermarkets and form part of our staple diet. Another renowned Arab travel writer called Ibn Battuta, writing in the same year and journeying through Sudan, describes in detail about the date palms, water melons, shea butter, calabash, pennistetum, pulped lotus flour, rice, fonio, kidney bean, flour and yam cultivated in the Sudanese region. Crops produced in Britain in this period did not match the variety found in Africa and anyone hunting game without permission could be executed or dealt with extremely harshly by the local Lord. During the middle ages in Africa the diet was varied and balanced.

One of the first visual images of agricultural practice found anywhere in the world must be the large rock paintings that have been found in the Sahara Desert, painted between the 4th and the 3rd millennium BC. These rock murals show illustrations and images of cattle herding though some critics say that the cattle depicted are not domesticated. Saharan rock art also shows the world's first pictorial record of someone milking an animal. A 9th century account from China exists which describes East Africans mixing ox blood with milk and then drinking it, a very nutritious practice which still occurs today in parts of Africa. This account also adds weight to the wide international links that existed between Africa and other parts of the world. Herodutus the Greek historian, writing in the 1st millennium BC describes the cultivation of dates which were grown and deliberately cultivated along the expanding trade routes of the time in order to provide en-route a nutritional source of food.

The African people are skilled agriculturalists and quite possibly one of the results of the European incursions into the continent could have been the transmission of their agricultural knowledge and practices to Europe. This export of knowledge could have helped to fuel the 18th century Agricultural

revolution in England. One example of the African peoples great understanding of farming methods and principles is the Serer people living in the Sahel region of Africa who for over a thousand years have planted crops of A alibida like the plant acacia, because they were aware of the positive effects that this plant had upon soil fertility. They have developed a complex agro-pastoral culture where crops and animals working in partnership help to create a sustainable agricultural system. They maintain 50 mature trees for every hectare which provide shelter at night for cattle who at the same time fertiles the trees and the surrounding area. Also the cattle eat the fruit of the trees which provide a medicinal source as well. There is a local African saying which says,

'In the beginning there is a tree'

And a pre-Islamic proverb which says,

'If you cut down a tree you remove 3 bags of mil from your granary.'

The Serer's also believed that trees had been in existence since the dawn of mankind and that they are there primary to provide a service to mankind. With the destruction of vast areas of rain forest today and the rise of incidences of global warming the Serer's philosophy is even more relevant in to the world today.

20,000 years ago the African cereal mil was in a state of transition from been a wild plant to been a domesticated one and in this period was cultivated in ceramic pots. Since the beginning of Serer memory these people have been aware of 8 different types of millet and today, mil and sorgho which are large and small grains are planted together simultaneously. It has to be stressed that this agricultural knowledge was acquired over many generations and involved much trial and error. In the Tichitt Walata region of Mauritania it took them around 500 years of experimentation to select Pennisetum as their staple crop rather then the grain Kram, plants local to the region. Kram is a spiky plant that is pounded to get rid of its spikes and the seeds are grounded up whilst Pennisetum is a type of grass used either as pasture, hay or silage. The website titled Common Edible Plants of Africa gives excellent descriptions of these plants. Archaeologists obtained this knowledge from marks of grain found on ceramic pots unearthed in the region. At one stage 80% of the marks found on pots were made by Kram

but half a millennium later most of the grain marks on ceramic pots were made by Pennisetum.

An array of agricultural systems were spread across the whole of the African continent. The vast population could not have sustained itself simply through hunter/gatherer communities. Also the African people could not have survived the brutality of the trans-Atlantic crossing if they had been a weak and undernourished people. These agricultural communities were also deeply rooted in Africa. For example the Kintampo Caves in northern Ghana played host to a community of cave dwellers dating back 3,500 years.

Also evidence has been uncovered that yams, millet, pumpkin and palm trees were also grown in the region of the Kintampo Caves. Joanna Casey who has studied the various cultures of this region described them as,

'Settled horticulturalists.'

Monks in Ethiopia cultivated domestic plants similar to European monasteries and each Ethiopian monastery is said to have had a well cultivated and managed garden. Monks in Ethiopia altered the genetic nature of ensete, a banana type plant, so that it did not produce fruit. Holy men and shaman living in isolation in the mountains of Ethiopia developed and accumulated a vast amount of plant knowledge. Much of eastern and southern Africa was occupied by Bantu speaking iron age cultivators. They settled in areas close to good water sources on the edge of forests, in fertile valleys and along coastal and lake shores. These Bantu communities were dependant for their survival upon yams, sorghum, fishing, hunting and upon the keeping of livestock. In east Africa many permanent communities were formed along the shores of Lake Victoria. A lot of forest areas were cleared in this region and on the foothills of high mountains like Mount Kenya and in areas close to the Rift valley and western Tanzania. In southern Africa by 500 years AD, small groups of people had settled in valleys and on land going up into the high veld. The upland areas were also quite probably used for grazing their cattle herds on. Circular huts were constructed with central cattle pens together with storage pits and graves. These became very distinctive to southern Africa as were the straight streets and rectangular huts of the western equatorial African hamlets. In rural Jamaica the African tradition of burying one's family close to one's home is still carried out. The grandmother of the owner of a guest house that I stayed in was buried by the washing line close to the steps leading to my apartment. People living in

forest areas cultivated yams, coco-yams, bananas and legumes. They also grew kola trees and exploited the palm products growing in the vicinity. Rice was grown as a staple crop from Gambia to Liberia. In the Savanna grasslands a wide variety of types of grain were grown. In northern Ghana millet was propagated with the aid of light weight hoes which only touched the soil's surface lightly while the Hausa people of Nigeria used heavy hoes to grow their crop. These hoes dug deep and their millet crop was grown on ridges and they also used irrigation techniques to grow cotton and other specialized crops. Lastly the food grown in Ancient Egypt are vegetables which can now be purchased on a daily basis in the high street supermarkets in Britain today. Their gardens were filled with leeks, onions, cucumbers, peas, beans, radishes, melons, dates, grapes and figs, barley and emmer wheat. The Africa of 3,000 years BC shapes our diet and cuisine in the 21st century. Take away this agricultural expertise and knowledge and the world that we know today would be a totally different world.

Classroom Activities

1. Map out the different types of food grown on the African continent. Research the plants and their uses. Possibly log on to the website titled Common Edible Plants of Africa. On this map mark in the river and lake systems, the type of environment i.e. savanna grassland/forest/mountains
2. Map out the Bantu migration paths – draw up a time line of this mass migration.
3. Create an experiment in the classroom using the Decrue Method. Plant seeds on a soil heavy in moisture and soils with less moisture. Look at the different results. Compare and contrast the differences and analyze the reasons for the differences. See whether this system could be improved upon.
4. Discuss environmental issues raised in an African's approach to the land and whether this approach could be relevant in today's debate about climate and environmental change.
5. Write an essay from the perspective of an African living in a prosperous pre-history farming community who finds themselves on a modern farm in Britain.
6. Working in small groups get the class top devise a board game based around African agricultural knowledge and production. It could be like a monopoly type game where certain plants and knowledge are of more value then others. Use the internet to find out this information as well as resources in the school's learning centre and library. Make sure that a clear list of the plants that are grown is compiled by the students.
7. Compare and contrast maps produced from other activities. Are these maps helping them to gain a greater understanding of Africa?
8. *'Small is beautiful'*. Discuss this statement in relation to African agriculture. Do you think that this statement has any relevance in the 21st century?