

## Chapter 1 : Desertification: A review of the concept

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Home Features Checking desert encroachment in Nigeria Checking desert encroachment in Nigeria By Uwumarogie On many occasions, environmentalists have drawn the attention of Nigerians to a report issued by the Food and Agriculture Organisation of the United Nations, indicating that Nigeria has the highest rate of deforestation in the world as of Also, worried by the report and its implications, government, non-governmental organisations and environmental agencies, among other stakeholders, have evolved pragmatic approaches to checking the menace. These approaches notwithstanding, concerned citizens observe that tree-felling across the country, which they sight as one of the causes of desertification, is rampant. According to her, apart from preventing natural disaster, more than 1. Corroborating Mohammed, Mr Adeniyi Karunwi, Director General, Nigerian Conservation Foundation, observed that tree-fellers had cut most of the trees that would have provided the needed cover for the earth. In spite of this, Mr Akinrele Olusegun, observed that although re-planting trees could be useful, it would be meaningless if constant felling of trees for domestic purposes continued. He mentioned charcoal producers as perpetrators of tree-felling for personal economic gains, contributing to deforestation in the country. He said constant felling of trees for fuel wood should be discouraged by the relevant authorities. He noted further that many citizens did not respect laws prohibiting indiscriminate felling of trees, warning that anybody caught would be prosecuted. Tree planting in Zamfara Photo: The ban followed the adoption of a memorandum by the Federal Ministry of Environment entitled: However, Dr Dupe Ogunsusi, an environmentalist, observed that for the policy to be effective, government should subsidise the prices of kerosene, make electricity stable and regulate the cost of cooking gas. In addition to this, Karunwi said his foundation had been working hard to ensure successful implementation of environment restoration and conservation projects in the affected areas. He, however, noted that the concern of the foundation was the restoration and conservation of dry and wetlands habitat in the Sahel region for improved livelihood. Stressing the importance of tree-planting, especially economic trees, Mrs Mobola Sagoe of the National Association of Shea Butter Producers in Nigeria, said that shea nut could generate huge money for the country annually. The tree has a year life span and could produce between 25 kilogrammes and 50 kilogrammes of nuts annually. Sagoe, nonetheless, said that with the growing demand for firewood and charcoal in the country, the shea tree faced extinction. Similarly, Ms Folashade Ogunjobi, a final year student of French Language, Nasarawa State University, Keffi, said that charcoal business had affected most of economic trees across the country. Giving reasons for the popular demand for charcoal, Malam Abdullahi Goni, a charcoal seller in Abuja, said that unsteady electricity, prices of cooking gas and kerosene, had made more people to choose charcoal for cooking. Also, Mrs Zainab Sanusi, a charcoal seller in Karu, Abuja, admitted that although she was aware of the negative effects of the business on the environment, she had no choice than to continue with the charcoal trade as her means of livelihood. All in all, Dr Newton Jibunoh, Founder, Fight Against Desert Encroachment, advised the government to initiate programmes to check desert encroachment to avoid its devastating effects on the country. He, therefore, urged every Nigerian to be part of the crusade against desert encroachment to mitigate the negative effects of desertification.

*Of all published articles, the following were the most read within the past 12 months.*

Is the Desert Encroaching? Sudan and completed in Its general goal was to develop, test and apply monitoring methods, for the understanding and prediction of desertification Ref. The Sahelian pre-drought, drought and post-drought period and the Province Northern Kordofan was the focus of the project. Definition of Desertification --Desertification is the diminution or destruction of the biological potential of the land, and can lead ultimately to desert like conditions Ref. It is implicitly understood that desertification leads to long lasting and possibly irreversible desert like conditions. Shallow sand encroachment appears to have killed nearly all vegetation except the trees *Acacia tortilis* and *Balanites aegyptica* and a small number of dune adapted shrubs as far south as 15 N in the Hamrat El Wuz area. Immediately south of this area mobile dunes are moving southwards with the prevailing wind and are becoming an increasingly serious threat to the agricultural land and several villages in the Bashiri and Bara areas of the Kheiran region. The sand dunes are being augmented by the very large area of drifting sand further north near Hamrat El Wuz. This is a commonly accepted description of desertification in Kordofan reproduced e. It was even stated by Ref. A severe effect of the described desertification is declining food and meat production. It was also stated that desertification is spreading like cancer in other areas including the adjacent low rainfall savanna and that it is quite clear that desert encroachment in the Sudan is mainly a man made phenomenon caused by the misuse of land. Cultivation in marginal areas was assumed to be one of the main causes of desertification. The spread of the Sahara has probably been measured most precisely in Sudan. There, as elsewhere, vegetational zones are shifting southward as a result of overgrazing, woodcutting and accelerated soil erosion. Steppe loses ground to the desert, it creeps into the neighbouring savanna which, in turn, creeps into the forest" Ref. Overcultivation has been mentioned as a major cause of desertification by Ref. The matter is described in the following way by Ref. It was stated by Ref. This opinion contradicts the one presented by e. Another mechanism of desertification described in the literature includes the expansion of existing vegetation-stripped village and water hole perimeters generated through overgrazing and wood cutting Refs. When several village "desert patches" coalesce a local or regional desert is created. According to Ref 18 it could be proved, by the heir of satellite photographs, that desert expansion proceeds by way of forming new marginal islands around the villages of the settled cultivators in the Sahelian zone of the Sudan. However, it was not possible to verify this concept of desertification in north Kordofan in the present project. The following section is condensed from Ref. Sahara encroachment A stratification of a transect through N. All imagery was in the original scale of 1: It was not possible to identify any significant shifts in borders between and The border coincides roughly with the mm isohyet at latitude 16 degrees North. The desert boundary was mapped by Lamprey Ref. Lamprey based his map on a combination of reconnaissance flights and ground based surveys from a car. He concluded that the Sahara desert had advanced km between and The border fluctuates around latitude 16 degrees N roughly corresponding to the mm isohyet and in rough accordance with the Landsat based results presented above. It seems, however, that the desert boundary described in the vegetation map of Ref. It might explain why Lamprey found the desert boundary to be located km north of the boundary defined by himself in There does not seem to be any evidence for the Lamprey conclusion that the Sahara desert had advanced km in the area during the period The vast Sahara dune complex encroachment mapped by Ref. The proportion of the Qoz zone considered to be under cultivation inside the transect was assessed for There is a good correspondence between these data and data for Northern Kordofan recalculated from the official agricultural statistics. A 6, sq km area located in the centre of an old core area of cultivation was mapped to the scale of 1: The proportion of cultivated land for the years , Precipitation data annual and the sum of July-September , proportions of cultivated Qoz land, variation of yield and production for the staple food crops millet and sorghum together with estimates of the areas used to grow these crops for the period were plotted in graphs. The expansion can hardly be explained by a population increase during this short period. The availability of new water resources might have resulted in the cultivation of areas which could not be reached before because

of lack of water for the labour. It seems that the farmers succeeded in keeping up food production fairly well during the drought in spite of declining yields. It was demonstrated by Ref. Analysis of the data indicates that the size of the areas under millet production in a specific year can be described as a linear function of the average yield of millet and sorghum for the two preceding years in the time series. No significant northward transgression of the cultivation limit was noted between and . It was found around latitude . The reliability of the area assessment is of course very uncertain. It indicates that the proportion of Qoz land under cultivation, more than years ago. Desertified village perimeters To follow the development and possible increase of desertified area surrounding villages and water holes, 77 villages, most of them located within the old core of intensive cultivation, were identified on air photos from and digital Landsat data from February and January and RBV imagery recorded January . The Landsat MSS data were registered to the data through a nearest neighbour resampling. The residual error X and Y was assessed to less than half a pixel. The maximum width of existing perimeters were measured together with village diameters. The type fula, well, borehole, hafir, water yard and number of water sources available in each village were noted and the total water resources available in each village was assessed on a nominal scale. The water resources data were obtained from Refs 27 and . Possible relations and trends were studied through multiple correlation and variance analysis. It was not possible to find any systematic change in the size of the perimeters for the periods studied. The size of existing perimeters could not be related to the size of corresponding villages. However, a relationship seems to exist between water resources available in a village and the width of its perimeter. It was indicated that some of the fluctuations in the size of the village perimeters can even be a result of rotational land use. Encroaching dune systems Kheiran is the name of a large dune complex elongated in North-South direction about 80 km x 15 km and located west and north-west of Bara forming the southernmost end of the dune front indicated in Fig. The area is made up of transversal dune ridges E-W and interdunal depressions. The major part of the area is covered by vegetation. Vegetation free dunes were reported around El Tawil and El Hamra as early as . He even suggested that the whole country covered by undulations was once a lake fed by streams from surrounding areas. He described the southern parts of Kheiran as a deforested and heavily grazed area with many active crescent dunes. Kheiran has attracted people, at least since the beginning of the 19th century, because the ground water in the interdunal depressions is very close to the surface. About of the were used for irrigated cultivation during the Turkish Government rule . Good access labour in the form of slaves was an important factor in the agricultural development. The decrease is explained by Ref. January , January and October were used for a study of the barren dune field in the southern part of Kheiran. The dune field is located at the southernmost tip of the large dune complex mapped by Ref. All MSS data were precision corrected through a third order polynomial transform and registered to the October data using a nearest neighbour resampling algorithm. X and Y residual errors were less than 0. No southward dune complex encroachment was found. Some new non-vegetated dunes were created in the south through vegetation clearing. As already mentioned, vegetation free dunes in the southern part of the Kheiran area was reported as early as Ref. It was reported that sand dunes around El Tawil seemed to gradually encroach southwards over the basin at the foot of the ridge. The El Tawil basin has been under irrigated cultivation ever since the beginning of the 19th century and is still not buried by sand. The land between Hamrat El Wuz and the barren dunes in southern Kheiran was covered by vegetation in , according to Landsat data and in , , and according to field surveys in the area carried out by the author. There are no signs of an active sand creep connection between the Sahara and the barren dunes in southern Kheiran. Summary and conclusion It was NOT possible to verify that: There was no creation of long lasting desert-like conditions during the period in the area corresponding to the magnitude described by many authors. There was however a severe drought impact on crop yield during the Sahelian drought . The drought effects on the natural vegetation productivity was most probably of the same magnitude. The impact of the Sahelian drought was short lasting followed by a fast land productivity recovery.

**Chapter 3 : Varieties of Encroachment**

*Can desert encroachment be stopped?: A study with emphasis on Africa (Ecological bulletins) [Anders Rapp] on calendrierdelascience.com \*FREE\* shipping on qualifying offers. One third of the earth's surface is arid or semiarid.*

Information to stop desert encroachment in The Gambia. Permanent link to cite or share this item: Notes Information to stop desert encroachment in The Gambia Cue: Desertification is one of the most serious environmental problems facing Africa today. In parts of The Gambia, the loss of agricultural land to the desert is particularly serious, with drought, deforestation and the common occurrence of bush fires contributing to the problem. Protecting and enhancing the remaining forest resources is vital, and has been a key focus for work by the Gambia World Development Agency, a non-government organization based in the capital Banjul. Much of that work has involved spreading information and new technologies to people in the affected areas, and the organisation has used a wide variety of approaches to deliver that information. Susanna Thorp spoke to Kebba Bah, the Executive Director of the Agency, about the different approaches his organisation is using. She also wanted to find out about a new resource centre, recently established to co-ordinate natural resource management strategies in the country. But Mr Bah began by explaining how his agency had been helping communities to the north of the Gambia River, one of the most seriously affected areas, to learn how establishing community forests could help to protect their scarce forest resources. We had a series of exchange visits? Transcript Bah We had a series of exchange visits, for them to visit some successful community forests. But in the East areas where we are also operating we have encouraged them to be involved in agroforestry so that they would help revive the vegetation that is affected. Thorp So you are encouraging them to grow particular trees that have certain properties that will be useful? In some areas we incorporated improved cooking stoves, and they realised how much they would save in terms of fuel and walking distances of km, especially the women to get some firewood, and this has turned out to be a very successful study, quite a lot of the women are doing it now in some villages. Thorp Now you said one way of sharing information is actually by taking farmers from one area and showing them what? What have you been doing to share that information more widely? Bah The information we have been using the national radio station, and sometimes we use some commercial radio stations, community radio stations. We organise awareness days where we bring farmers together annually to share their experiences, that? We also encourage school children to come up with posters and to come up with dramas, as a debate, and of course, teachers involved in environmental studies disseminate and use this in their own curriculum, actually. But right now with the newly approved project by CTA of establishing an regional information centre, we are looking forward to continuously collaborating with Department of Forestry, Department of Agricultural Services and some of our other traditional partners in developing this regional natural resource management centre, funded by CTA, to be a centre of excellence to serve natural resource dissemination in the area. Thorp So how do you think that? Bah Of course it will go a long way in disseminating information, especially in areas of bush fires, which is a major concern for the Gambia. It would go a long way in coming in with posters, coming with messages and coming with radio programs, so that we would hire resource persons, specialists in different sectors of natural resource management. We use them as panelists and disseminate this information over the media and over the radio television and radio Gambia and community radios, and the audience are given the chance to get back with questions in different languages that are spoken in the Gambia. Thorp So you can have those agencies really sharing knowledge amongst themselves so that they have a common understanding of the different problems, but also you? Bah That is true, because the human resources are not a problem in the Gambia, it? Thorp So, a positive move then for good natural resource management in the Gambia for the future? Bah For the future it is to maintain and develop this resource centre and bring all specialists on natural resource management of different domains under one umbrella, and come up with a committee that gathers advice and guidance to see how best we can forge ahead and save natural resources in the Gambia.

**Chapter 4 : Desert Encroachment**

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The different meanings tend to be indicated here in the same cluster. Encroachment of biophysical space

**Territorial encroachment** The following cases focus primarily on land and property defined by fixed boundaries: Encroachment across "national" territorial boundaries: Throughout human history there are numerous examples of one people encroaching on the territory of others. Territorial encroachment has often been fundamental to the foreign policies of countries: In international law the principle of non-intervention between states specifically excludes all kinds of territorial encroachment, including temporary or limited operations so-called "in-and-out operations". Anytime one nation attacks another without direct provocation, the attacking nation is guilty of territorial encroachment, thus transgressing all international law.

**Encroachment on lands of indigenous peoples:** Historically it is apparent that indigenous peoples were exposed to the most blatant forms of territorial encroachment, culminating in colonialism. Where the land was relatively unpopulated, the indigenous population often only became aware of the negative consequences after the settlers had effectively taken possession of the land. The problem was exacerbated in those cases where the settlers claimed ownership under a particular legal conception, whereas the indigenous population do not. The progressive encroachment on Native American lands by Europeans, and their subsequent restriction to reservations, offers a striking example. The encroachment process is legitimated and exacerbated by economic arguments in support of mining, logging, the need for transportation networks, construction of large dams causing flooding of large areas. In promoting national development through trade liberalization, structural adjustment and the promotion of foreign direct investment, the World Bank routinely advises countries to rewrite national mining codes to facilitate large-scale mining by foreign companies. These revised mining codes are been pushed through without the participation of indigenous peoples and without taking into account the interests and rights of indigenous peoples [ more ]. In the Middle East the IDF is understood to be encroaching on Palestinian Authority territory as a tactical measure to provide better security to its forces and Jewish residents [ more ]. Others suggest that it is Palestinians who are encroaching on Israeli territory, not the other way round [ more ]. However the series of enclaves created by the Wall is also seen as emasculating Palestinians in their fight for land against the ever-encroaching Jewish settlements [ more ]

**Encroachment on neighbouring property:** This the extension of any building, improvement or structure located on one property such as a wall, fence or driveway across a boundary line and onto adjoining property. Many have been exposed to this form of encroachment, whether through occupation of common frontage by a neighbour, growth or construction or moving of dividing fences to the disadvantage of one neighbour, disposal of rubbish such as to affect a neighbour, noisiness power tools, music, etc affecting a neighbour, constraints on rights of access, obstruction of "ancient lights" such as by the growth of separating hedges , etc. The encroachment may be purely visual, as when one neighbour prefers a degree of nudity in their garden that is shocking to neighbours exposed to it, or exposure to treatment of animals, or to odours generated by cooking or animal husbandry. Encroachment by roots under boundary walls may also be a nuisance and cause damage. The progressive occupation of a property by squatters may be undertaken in such a way that, even legally, it becomes difficult to evict them. People with a primarily nomadic lifestyle such as gypsies may temporarily occupy common land, or other property, in ways that come to be experienced by the inhabitants as encroachment. The issue may be less the use of the land and more the infiltration of the community by quite different standards of behaviour.

**Encroachment of government land:** Such land encroachment notably into national park areas may be undertaken by native peoples, graziers, miners, slum-dwellers and others with vested interests. This may include the elites of a country. People forced or choosing to move from distant locations may occupy land or take up employment in such a way as to be experienced as encroachment by the original inhabitants -- however well-intentioned the latter in offering asylum as in the case of Norway. Game

simulation of territorial encroachment: These exemplify the two basic approaches to this category of games. Chess portrays the clash on a specific battle between two opposing armies. Go has a greater emphasis on sacrifice than chess; it is often the case in go that sacrifices, when part of a bigger plan, forms an important part of the strategy. Environmental encroachment The process in this case is often justified by the urgency of favouring "jobs" or "industry", "shelter", etc over "environment": Urban encroachment on greenbelts: This process is typical of so-called "green-field" "development" endeavouring to acquire space for housing, factory or highway construction. It may be preceded by re-zoning where the rule of law is respected , but also occurs through uncontrolled construction of slum-style dwellings on the outskirts of towns which may have been formally declared to be greenbelt zones. Trees lining rural roads as in France may be removed with the argument that they are the cause of fatal accidents by drunken or speeding drivers. Encroachment on urban parkland, gardens and trees: Regulations governing greenery in cities may be progressively modified in ways that ensure the removal of trees, and the environmental degradation or elimination of gardens. Trees beyond the fences of sensitive sites airports, power stations, etc may be removed to prevent their use as cover by terrorists. Encroachment on wilderness areas: Nature was for hundreds of thousands of years an enemy to encroaching man. Encroachment on nature and wilderness habitats is now typified by the development of tourism in the form of walkers needing networks of paths and the needs of all-terrain drivers for challenging countryside on which to test their vehicles and driving skills. Encroachment may also be justified by the need to generate energy through the construction of dams or wind farms, or the draining of lakes. The visionary sense of many of the great nature poets, valued the momentary epiphanies of place and object world as rare events, to be preserved over against the encroaching destruction of nature as well as the alienating features of city or man-made environment -- making its beauty hard to apprehend. The issue of forestland encroachment and its consequent impact has been debated at all levels -- national and international. While the pro-encroachment lobby nationalizes encroachment of forest land on the basis of tribal land rights issues, livelihood and subsistence needs argument, the anti encroachment lobby points out the massive deforestation and accompanying degradation and its implications on the ecological stability. The widely-reported insidious increase in the level of pollutants in the environment requires no comment concerning their encroachment on the ecosystems and their consequent degradation or loss of viability. This concerns the encroachment by development into plains that may be flooded very infrequently. Bush encroachment affects the agricultural productivity and biodiversity of certain regions, notably southern Africa. Bush encroachment occurs in many arid regions where fuel loads are insufficient for fires to be an important causal factor. Trees will outcompete grasses and bush encroachment will result with current trends in carbon dioxide emissions exacerbating shifts from grass to woody plant domination [ more ] Encroachment through species introduction: The encroachment of invasive alien species eroding natural ecosystem is illustrated by classic cases such as the innocent introduction of rabbits into Australia and the subsequent need to engage in extremely violent and inhumane efforts to exterminate them. The introduction of genetically modified species illustrates the related danger in the case of traditional crops being progressively constrained by the modified species with unforeseen results. Encroachment by wild animal groups: Animals living in groups tend to control a geographic area, which is to say that de facto, the alpha male and his allies own the geographic area. They defend their territory from encroachment and seek to encroach upon surrounding territories. Encroachment involves periodic stealthy forays into surrounding territory for the purpose of isolating and killing an individual from another group. This familiar case highlights the nature of the behavioural context in which smoking initially appears to be a totally innocent activity. However, with the accumulation of the incidence of smoking, not only is an unpleasant environment created because of the smoke-filled air but the health hazards associated with passive smoking gradually become apparent. The challenge for the non-smoker regarding when, where and how to say "no" are also evident. Encroachment of sociopolitical space Group encroachment Encroachment on group space: Groups, as with individuals, surround themselves with an invisible area that functions as a boundary during group interaction. This has been termed group space. Encroachment on group space may occur when others perceive large physical distances separating group members or when the group is mistaken for a crowd. The number of group members determining group physical size as group space is perceived to increase as group

membership increases. Encroachment on a group: This form of encroachment is characteristic of espionage

Encroachment by a group on an individual: This process is notably encountered in sects. Newcomers may be subjected to unexpected degrees of friendliness from a group to gain confidence and evoke sympathy for the group. In this form it is known as "love-bombing".

Encroachment by a group on another group: This process has been publicized in the case of feminist corporate executive groups seeking to breakthrough the glass ceiling associated with the informal networks of their male colleagues. This may be characterized as infiltration. Another example, in time of intervention in response to crisis, is the encroachment by military forces on the humanitarian space that is the normal field of action of NGOs [ more ]

Encroachment of external interests on a group: There is often a tension between the overt legitimizing function of cooptation which enhances its effectiveness in dealing with its external environment and the covert encroachment external interests on organizational power which deflects organizational activity from its intended goal. This tension underlies much of the debate in European integration between intergovernmentalism and supranationalism. This is the case of the gradual increase in a community of the proportion of people of "foreign" ethnic origin, possibly as a result of a deliberate immigration policy, or possibly as refugees.

Encroachment by the needy: In the case of education in need of special assistance, the term is used by education officials and financial analysts. It refers to money allegedly taken from funds for regular education to provide special education services, on the assumption that there is a gap between the money needed and the money provided. The argument is that school officials should not have to comply with such a mandate if they do not receive enough funds, although there is no agreement how much money is needed for special education. Encroachment then becomes the jargon of the shakedown artist, who, failing to extort more money, uses it as an excuse to resist the mandate itself.

Gangs are usually territorial in nature, identifying with a particular neighborhood and protecting their "turf" from encroachment by other gangs. Gangs may encroach on neighbouring communities, institutions such as schools , terrorizing and intimidating law abiding citizens. Triggers for gang wars range from assaults on individuals to territorial encroachment by other gangs

Political encroachment

Encroachment of power: After discriminating, therefore, in theory, the several classes of power, as they may in their nature be legislative, executive, or judiciary, the next and most difficult task is to provide some practical security for each, against the invasion of the others. What this security ought to be, is the great problem to be solved. Will it be sufficient to mark, with precision, the boundaries of these departments, in the constitution of the government, and to trust to these parchment barriers against the encroaching spirit of power? The conclusion which I am warranted in drawing from these observations is, that a mere demarcation on parchment of the constitutional limits of the several departments, is not a sufficient guard against those encroachments which lead to a tyrannical concentration of all the powers of government in the same hands. Power aims at extending itself, and operating according to mere will, wherever it meets with no balance, check, control or opposition of any kind. For which reason it will always be necessary. This has been concern throughout the history of the Catholic church exposed to encroachment on its inalienable rights. In the form of imperial encroachment, it has been a major concern for less powerful countries throughout history, and more recently, to socialist and communist regimes sensitive to imperialist capitalist encroachment. Countries such as UK, France, Spain, Portugal, Denmark, Sweden, Norway and Switzerland, all fought imperial encroachment for centuries, and with respect to the European Union are hence currently inclined to associate an overarching continental political authority with the reappearance of the "Reich" in a new guise. The US attack on Iraq has caused that the real reason for this was a defence of the US dollar against the use of the Euro in oil exports and payments by OPEC member countries [ more ]

Legal and government encroachment This is the process whereby other patterns of encroachment are given substance through legislation, "red tape" and criminalization of alternative activities:

Encroachment by precedent creation: This process is currently the subject of media attention in relation to the marriage of gay couples.

**Chapter 5 : Nigeria: 'Stop Uncontrolled Tree Felling Or Face Desert Encroachment' - calendrierdelascience**

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Hassan Desertification is gradually moving southwards - turning vast settlement into deserts, threatening human existence and degrading the environment. In this interview, Zamfara State Commissioner for Environment Mouktar Mahammed Lugga says the eleven frontline states worst hit by desertification in the north are ready to face the threat head on. What is the visible impact of desertification in Zamfara State? There are a lot of impacts which vary from place to place. We have some of our settlements that have now been occupied by the desert especially as you move towards the border to Niger Republic. Those were settlements that used to flourish but if you go there now, there are few people; most of the inhabitants have migrated to other areas. You know we are mainly Fulanis so we have nomadic farmers who are cattle rearers. Let me tell you something interesting, in the last few months in this region, there has been so much migration of Fulani families to Ilorin, Adamawa and other areas. People are leaving their homes because they no longer have grazing land for their animals and the yield in terms of agriculture has greatly reduced. Zamfara used to be known for farming a lot of cotton, we even have a textile company which has closed down. Climatic changes have affected our food production and we mainly do subsistent farming. Our agricultural yield has reduced and even our land has reduced, a lot of it has been taken over by the desert so we seeing a situation where there is little land to be used by larger families. Another visible effect of desertification is that our forests are also fast disappearing. We use it for cooking and this is made worse by the advancing desert. Because trees are felled without replacement, it makes the problem more difficult to solve. We also have a lot of influx of people from other states, coming to also fell the trees for firewood and other purposes and supply them to other states. Our factories have shut down due to lack of raw materials and this means that many people no longer have jobs so there is a high rate of unemployment since we no longer produce the raw materials that would sustain these factories. These are some of the visible impacts of desertification in our state. We have not been able to do much and really it has altered our economic state that is why we feel we must take all necessary action now to prevent further harm. It is obvious that the lives of people are affected by this phenomenon. What are you doing in the area of public awareness? We have a lot of programmes being carried out locally here; we have a lot of awareness on radio for the people to really understanding the adverse effects of climate change on their lives as evident in the growing desert encroachment and to think of sustainability in the way natural resources are used because we have to guarantee continuity from the use of resources in the environment. We have a lot of things we hope to do. What we are doing now is that we are talking to stakeholders like the wood sellers association, letting them know that they need to sustain the environment even as they carry out their trade. We are encouraging them to plant more because it is not using firewood from trees that is hurting us but the fact that they not planting more to replace those ones that have been felled. We have a programme going on now and this is involving these groups of individuals in tree planting so that they can appreciate that resources have to be rejuvenated. You cannot just take and take from the environment with balancing it. We are also working with other organizations like the Federal Ministry of Environment to find alternative sources of energy. There are so many sources but the challenge is the cost. We are trying to see how we can harness these and get our people to start using them. We are doing a lot in this regard and we centre mostly on sensitization in the area of equitable use of resources. What is the motivation for Zamfara State leading other frontline states to take a stand of desertification? The motivation is the desperation to get a solution for our people. We have to do something and we have to do it fast since we cannot continue to run away from it. This is something that is inevitable, the desert is coming to take over so it is either we choose to run and keep running or we stand and confront it but we are brave enough to say that this time around, we would stop running and confront our problem. Convincing the rest of the eleven frontline states faced with desertification were very easy because they also shared the same passion and the same problem and all that was needed was a trigger which Zamfara State provided. I can tell you that I find them equally very passionate

about the problem, I can even say some of them are more passionate than myself. Do the frontline states have a long term plan to tackle desertification? We hope to harmonize all the environmental laws as it affects the eleven of us. We want to have uniform laws and be able to push for legislation that would recognize the fact that we have these problems and accord us with some status of environmentally challenged states because we are truly environmentally challenged. We cannot hope to achieve much development if the environment is holding us down. The long term plan is for us to be able to fashion out a standard framework consisting of solutions, rules and an economic agenda tied to the environment because the effect is that once we are able to stop desert encroachment, we are certain that we would see a period of economic boom and the north will be able to go back and take its rightful place in the league of states when it comes to contribution to the national growth. Is the climate commission bill critical to your course? I think it is very critical and we are going to identify and concern ourselves with it. We intend to use it as an advocacy tool to get the attention of the presidency. This is unhealthy and no one should sit down and think that it is really none of their business because let me tell you that the temptation and the desperation are there to move to areas that are not feeling the impact of desertification. When we talk of environmental issues, they have no respect to border so this desert would continue to move. If it overtakes the north, it would consume the middle belt and it would continue its southern movement until God knows when. How do you intend to access international fund to address the problem? Funding may not be a problem if we are able to show seriousness and the ability to help ourselves before others can also come to our aid. We are not kidding ourselves that what we set out to do is going to be easy, but what we lack in funds, we make up in sheer determination so we are determined, and funding is not going to stop us though it may slow us down. What we have going for us now is that we are a desperate group of people and we are desperate for solutions to solve our problem. We are passionate about what we are doing, we take it as a job and this is coming from the heart and I think it is going to sustain us initially. To contact the copyright holder directly for corrections or for permission to republish or make other authorized use of this material, [click here](#). AllAfrica publishes around reports a day from more than news organizations and over other institutions and individuals, representing a diversity of positions on every topic. We publish news and views ranging from vigorous opponents of governments to government publications and spokespersons. Publishers named above each report are responsible for their own content, which AllAfrica does not have the legal right to edit or correct. Articles and commentaries that identify allAfrica. To address comments or complaints, please Contact us.

**Chapter 6 : Desert encroachment: FG earmarks N10b for green wall programme - Vanguard News Nigeria**

*Title: Can desert encroachment be stopped? A study with emphasis on Africa Edited by A. Rapp, H. N. LeHouérou, and B. Lundholm. Ecological Bulletin No. 24, Stockholm.*

A review of the concept Michael H. The phenomenon known as desertification has received widespread attention recently, as witness the creation of the United Nations Conference on Desertification in Nairobi in , mainly as a result of the impact of extended drought in the West African Sahel in the early s. That drought caused loss of human lives and livestock and widespread environmental deterioration. Although a number of recent articles, papers and reports from many countries begin with comments on the role of the Sahelian drought in the growing interest in the desertification issue e. Glantz, ; UN Secretariat, ; Quintanilla, ; Zonn, , that drought was neither the first manifestation of the desertification phenomenon nor the only reason for scientific interest in it. Aubreville, a French scientist, popularized the term desertification in his report as long ago as Aubreville, , and others e. Le Houerou, have discussed the phenomenon since the late s. It described desertification as: It is an aspect of the widespread deterioration of ecosystems, and has diminished or destroyed the biological potential, i. Important factors in contemporary society--the struggle for development and the effort to increase food production, and to adapt and apply modern technologies, set against a background of population growth and demographic changes--interlock in a network of cause and effect. Progress in development, planned populations growth and improvements in all types of biological production and relevant technologies must therefore be integrated. The deterioration of productive ecosystems is an obvious and serious threat to human progress. In general, the quest for ever greater productivity has intensified exploitation and has carried disturbance by man into less productive and more fragile lands. Overexploitation gives rise to degradation of vegetation, soil and water, the three elements which serve as the natural foundation for human existence. In exceptionally fragile ecosystems, such as those on the desert margins, the loss of biological productivity through the degradation of plant, animal, soil and water resources can easily become irreversible, and permanently reduce their capacity to support human life. Desertification is a self-accelerating process, feeding on itself, and as it advances, rehabilitation costs rise exponentially. Action to combat desertification is required urgently before the costs of rehabilitation rise beyond practical possibility or before the opportunity to act is lost forever UN Conference to Combat Desertification, " The conference also served to bring together representatives of many countries whose landscapes had been directly or indirectly affected by desertification. The usefulness of the conference varied from country to country. In the United States and other countries the attention of national policy-makers was directed toward this form of environmental degradation and a Plan of Action was drawn up to assess desertification in a national context Sabadell et al. Desertification is acknowledged to be a complex phenomenon requiring the expertise of researchers in such disciplines as climatology, soil science, meteorology, hydrology, range science, agronomy, veterinary medicine, as well as geography, political science, economics and anthropology. It has been defined in many different ways by researchers in these and other disciplines, as well as from many national and bureaucratic institutional perspectives, each emphasizing different aspects of the phenomenon. Desertification is of particular interest to climatologists in their attempts to understand climate variation and change on both short and long time scales e. With increasing pressure on governmental decision-makers to allow populations to move into the climatically marginal areas, the implications of natural variations in climate have become even more important in decisions relating to the use by society of its land in these desertification-prone regions. One can easily assert that there will always be climatic deserts. However, man-induced extensions of these deserts or the creation of desert-like conditions in areas where they had not existed can and must be avoided. A review of the desertification literature shows a great diversity and confusion among definitions e. This mix of definitions meanings attributed to the concept leads to miscommunication among researchers, among policy-makers, and most important, between researchers and policy-makers see IGU, , passim. An analysis of the definitions of desertification could prove useful in developing an improved understanding of the phenomenon, of how it is viewed from different disciplines and countries and bureaucratic units , and of

whether progress in combating it has in fact been as slow as many observers suggest e. UN General Assembly, In the following sections we use these definitions as the basis for discussion, as they are often what is seen and used by decision-makers. In the last section it is argued that the concept of desertification also applies to higher-rainfall regions than those cited by contemporary researchers. Some researchers consider desertification to be a process of change, while others view it as the end result of a process of change. This distinction underlies one of the main disagreements about what constitutes desertification. Desertification-as-process has generally been viewed as a series of incremental sometimes step-wise changes in biological productivity in arid, semi-arid, and subhumid ecosystems. It can encompass such changes as a decline in yield of the same crop or, more drastically, the replacement of one vegetative species by another maybe equally productive or equally useful, or even a decrease in the density of the existing vegetative cover. Desertification-as-event is the creation of desert-like conditions where perhaps none had existed in the recent past as the end result of a process of change. To many, it is difficult to accept incremental changes as a manifestation of desertification. In fact, these two views represent different aspects of a broader concept of desertification. Thus, seemingly different statements such as "the creation of desert-like conditions in areas once green", "encroachment of desert-like conditions", "the intensification of desert-like conditions", as well as less drastic projections like "changes in soils and in climate" or "the land becoming less fit for range and crops", can be encompassed by the concept of desertification. Form of change Within the dozens of existing definitions of desertification, many words are used to describe the phenomenon, some of which complement each other while others appear to be contradictory. A point on which they all agree however, is that desertification is viewed as an adverse environmental process. The negative descriptors used in these definitions of desertification include: Reining, , degradation of various forms of vegetation e. Le Houerou, , destruction of biological potential e. UNCOD, , diminution of biological potential *ibid.* Hare, , reduction of productivity e. Kassas, , decrease of biological productivity e. Kovda, , alteration in the biomass e. UN Secretariat, , intensification of desert conditions e. Meckelein, ; WHO, , and impoverishment of ecosystems e. Each of these terms suggests change from a favoured or preferred state with respect to quality, societal value, or ecological stability to a less favoured one and each has been used to describe the condition of vegetation, or moisture availability, or soils, or atmospheric phenomena, depending on the particular definition. Other descriptors used in these definitions connote a movement or a transfer of the characteristics of a desert landscape into an area where such characteristics had not existed; extension, encroachment, acceleration, spread, and transformation. If one combined each of these negative and transfer descriptors with all the other factors cited in the existing definitions, desertification would encompass most kinds of environmental changes related to biological productivity see Rozanov, What is changed Different definitions focus on changes in soil e. Most of them, regardless of primary emphasis, also describe changes in biological productivity, with comments related to the type, density, and value of vegetation. Type-of-vegetation comments centre on changes from desired or accepted species to less desired or less accepted ones. Such comments cover a reduction in the proportion of preferred species having an economic or societal value, the lowering of yields of an existing preferred species, or a major ecological change such as species replacement. Changes in the density of the vegetative cover constitute an important factor acknowledged by many authors in their definitions of desertification. As density decreases, for example, the risks of wind erosion, water erosion and the adverse effect of increased solar radiation on bare soils are increased dramatically. Surface albedo reflectivity , also enhanced by a reduction in the vegetative cover, is a major contributor to desertification processes. With respect to the value of vegetation, a few researchers have explicitly referred to "lower useful productivity" Johnson, , "reduced productivity of desirable plants" Dregne, , "sustained decline in the yield of useful crops" UN Secretariat, , and "loss of primary species" Rapp et al. However, the concern with the value of vegetation in desertification processes is not shared by all. Some researchers have dismissed the value concern, by suggesting that any type of vegetation that holds the soil in place is of value in the fight against desertification, whether or not it has an economic value. As a final comment on what desertification is, it is important to note that disciplinary and institutional biases may appear in any given definition of the phenomenon. For example, a meteorological bias might require for the use of the term "desertification" that a

change take place in the meteorological parameters of a given region, so that they become similar to those for a desert region e. As another example, Meckelein ; cited in Kharin and Petrov, alluded to the disciplinary bases for desertification when he wrote that desertification could be characterized by the following components: Location of change There is no agreement on where desertification can take place. Many researchers identify arid, semi-arid, and sometimes subhumid regions as the areas in which desertification can occur or where the risks of desertification are highest. Others imply that the areas prone to desertification might not be restricted to arid, semi-arid, or subhumid regions, by using such descriptive words as extension, encroachment, and spread of desert characteristics into non-desert regions. Mabbutt and Wilson, , p. Many oppose this view, however, contending that desert-like conditions cannot be created in a desert. They assert that desertification can only occur along the desert fringes. According to Le Houerou, "desertification" can occur only in the mm isohyet zone. Reversibility Few definitions explicitly refer to whether desertification is permanent. Le Houerou , for example, explained briefly the conditions under which desertification might be reversible. Others have implied reversibility with reference to the higher costs of rehabilitation of desertified areas as opposed to prevention. For example, Adams suggested that the "reversibility of desertification was a function of technology and the cost of rejuvenating an area Irreversibility should refer to a situation in which the costs of reclamation were greater than the return from a known form of land use" IGU, , p. Still others implied irreversibility by referring to the end result of desertification as the creation of desert-like conditions. Two additional important considerations relating to the permanence of desertification are a when desertification as a process or event might be reversed i With respect to the time factor, desertification may be considered by some observers to be irreversible during a season or a few seasons but may be reversible on the scale of decades, or if not decades, perhaps centuries. Peel "saw great danger in the concept of irreversibility because it has no time limitations whatever" IGU, , p. One author has drawn a distinction between temporary and permanent desertification WMO Secretariat, Is it possible to distinguish between temporary desertification and, for example, seasonal environmental changes? Some have addressed this question by defining desertification as a sustained as opposed to temporary decline in biological productivity e. Le Houerou, commenting on "what is temporary? With respect to how desertification might be reversed, the reversal might occur naturally, once the contributing causes have been removed. Otherwise, human intervention might be required e. Kassas, if there is a desire on the part of decision-makers to reverse it in less time than might be required to do so naturally. Why does it occur? Some researchers consider climate to be the major contributor to desertification processes, with human factors playing a relatively minor supporting role. Other researchers reverse the significance of these two factors. For example, Le Houerou concluded that "on its edges the Sahara is mainly made by man, climate being only a supporting factor" quoted in Rapp, , p. A third group blames climate and man more or less equally. For example, Grove has noted that "desertification or desert encroachment can result from a change in climate or from human action and it is often difficult to distinguish between the two. This suggests that there is a region-specific bias to perceptions about desertification, one that spills over to the definitions. Debates about causes of desertification occupy a large part of the desertification literature and need only be summarized here. Climate variability a term that is usually itself undefined in these definitions seems to refer to the natural fluctuations that appear in the statistics representing the state of the atmosphere for a designated period of time, usually of the order of months to decades. Fluctuations may occur in any or all of the atmospheric variables such as precipitation, temperature, wind speed and direction, evaporation, etc.

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I felt delighted given the invitation by the members of the National Assembly from Sokoto, Kebbi and Zamfara states to be part of their team on a courtesy visit to the Minister of Environment, who happens to be from the same zone with us. To my knowledge the visit was non political or rather to cooperate. It was the first visit of its kind initiated officially and collectively by the members, in order to map out ways of solving some problem affecting their constituencies with those on power in Abuja. The gravity of desert encroachment and soil erosion in villages and major cities in this part of this country is becoming a source of concern to the people. Statistics have shown that desert is encroaching with about 20 to 30 kilometers annually or more than that in contrast to 10 years back, when we had difference from that or less below that in each 4-years, where there is shelterbelt programmes. Since it was notice by experts over , people have lost their farmlands and over that figures were rendered homeless, as result of such disaster within seven years of assessment in five states. The story of model villages in Gidan Gana and Gambanda of now Zamfara state nine years ago, are all fresh in our memory in which lives and property worth millions of naira were destroyed by floods and erosion. The construction of twin shelter homes for the flood victims at Dange, Yar Akija, Isa and Kware all of present Sokoto state some years back were too pathetic into our memories. These and many temporary makeshifts for the victims were all around, among us. The disaster occurrences have no boundary from Kaduna to Kano, from Kebbi to Sokoto. The states that are facing this large problems of fast deserts encroachment in Nigeria are Sokoto, Kebbi, Jigawa, Katsina, and Zamfara due to their North West geographical locations. Sokoto and Kebbi states face the most devastating effect of engulfing over and kilometers of total landmass in less than years coming. Despite aforestation programmes initiated by the past governments in these area on the tree planting it has only bring temporary measures on curtailing desert encroachment in years back, by getting to 5. This problem is completely different with the one in Zamfara and Kebbi states, where it was said farmlands roads and bridges were destroyed due to soil erosion and massive floods between While in Kano and Kaduna last year alone, more than farmlands and houses were destroyed in 12 local government areas of the two states. That has temporarily minimize the over flooding and destruction of property more especially farm lands and houses in Kebbi and Sokoto states as experienced last two years. But still Gulbin Rima, Gagare and Bunsuru were all threatening their neighbours, more especially looking at what happened back in similar incident that occurred in which over hectares of farm lands were submerged in floods at three different states. Although, Kaduna state is not lucky as those areas, because of opening up of the waterways that has caused much floods, which rendered hundreds of people homeless. In spite of that, whenever the flood disasters come nobody can prevent it. If there is one signs of negligence on past governments on this issue is lack of care, management control to the general society by reducing its massive effect or damages. In his speech, on behalf of his colleagues from Sokoto, Kebbi and Zamfara states, Honourable Usman Mohammed Balkore ANPP House Whip has registered their dismay on how past governments did not take such issue as serious in finding the lasting solution to desert encroachment, floods and soil erosion problems. He was surprise on the non-availability of data information of knowing how to curtailed this calamity befalling our people, as result of over flooding and soil erosion. In those areas, which rendered people homeless and destroying their farmlands. Honourable Usman Balkore has called on the minister to map out plans to address the problems of deserts encroachment and soil erosion in the northwest region, with particular reference to Sokoto, Kebbi and Zamfara states, so that people would be relieved of these menaces. He told the Minister of Environments that they left their offices with hope and determination of bringing ends of these suffering which not only affect such areas, but make their people to be living in fear of human made disaster. Honourable Balkore, who represents Kware and Wamakko Federal Constituency of Sokoto state one of the area seriously hit by floods last two years, has said it is necessary for the federal government and National Assembly to make a bill which would become an act on finding ways of solving problem of indiscriminate felling of trees, that are part of major ways for ending such calamity. Another problem in Sokoto state is soil Erosion as it still devastated

people, especially where the soil erosion has almost separated two main areas of Rabah, Sokoto state and Bakura, Zamfara state, at particular village called Gandi, this problem needs urgent attention from Federal Government, in order to salvage the people of these area from erosion, that stopped their commercial activities and cut them into boundaries. In addition the members have pointed to the Minister that there is need for immediate plans to address problem of erosion where it mostly affected in these states. Another point maker is in Zamfara state home state of the minister where soil erosion has almost cut the entire north west of the state to the state capital at Dan Marke Bridge, in which, part of bridge collapsed into one big gully erosion. However, there was other menace of erosion eating deeply the sideway of a major road that linked cities of Sokoto, Talata Mafara and Gusau, Zamfara state. Besides, the members has talked about the menace of desert encroachment in their regions, in which Honourable Bala Na Allah from Kebbi state, said the federal government needs to do something urgent about the threat posed by desert encroachment in some local government areas of Kebbi state This official visits of elected members of the three most affected states where the menace of deserts, floods and erosions affected most is a most welcome effort, since their inauguration last year. Indeed, we would not forget the National meeting on tree planting convened by President Olusegun Obasanjo in Katsina state, and its similar one that would create a fence shelter belt to some parts of northern states, starting from Borno state. Although nothing being done apart from age long traditional tree-planting exercise that always ends with providing animals with their new grazing area, no open achievement on the part of such programme. Despite huge amount of funds being spent, almost all the plant attached to the problem has not yielded any results on our people. As the Minister of Environment, Colonel Bala Mande rtd assured the legislatures that Federal Government would give priority on making new policies on the desert encroachment and soil erosion instead of spending funds on the aforestations, we hope that Minister will be able to fulfilled and stay on this challenge of liberating his people from this problems. The menace is speeding like a bush fire, it is imperative to realized the danger posed to the lives of our people, it is expected from the state governments to emulate the effort of their National Assembly members whom had forgotten their political differences and come out to salvage their people from the threat of deserts encroachment, floods and soil erosion. Whatever funds spent in salvaging lives of the people are not in vein, or much, because it would assist our next coming generation in protecting their future What happened to the Gidan Kaura Village of Gada Local Government, Sokoto state, almost over ten years ago, is shameful and lamentable to allow it happened again, as sand dunes forced people to abandon their houses, farmlands and historical places, to migrate into other place completely, because they have lost all their property in the sand dunes. There is also indication of such coming again as report indicate hot wind with sand is moving with threat especially toward some kilometers to Gwadabawa, Illela, Gudu, Silame, Gada Sabon Birni and Goronyo all of Sokoto state. The same problem is affecting some villages in Dandi, Arewa, Argungu, Shanga and part of Yauri local governments of Kebbi state. The story is the same in some places of Katsina, Kano, Jigawa, Yobe and Borno states, that desert threatens their people during hot or harmattan seasons. In spite of the fact that, we had several regimes in which northern people were the leaders, nothing was done to address the menace, and still our people were left to decide future of fighting these problem, themselves, as all it has shown Our hope, on this visit of the members of the National Assembly is to become the foundation of ending this problem once and for all. History will absolve them for taking this bold step with the appropriate officials of the government. The pledge made by the Minister of Environments, as to join hand with his other counterpart in the Water Resources in order to address the issue of flood and desert encroachment by expansion of Bakalori Dam, is a challenge to them, as all of them are from same geographical area, that was affected much; and as politicians it will be of great advantage to their people to done something that can benefit them. If this arrangement were executed, it would benefit about 70 percent of irrigation activities and reduces the burden of over flooding and lost of farm products, from the farmers that lives across those two large dams. It is imperative for them to realize that beautification of township; construction of roads in cities would not benefit the average masses that are battling with floods, soil erosion and seedlings damages. It is good for them, to face the menace in such a way that even when they are no longer in power, people would be grateful to their effective policies. The issue of Rabah town, thirty kilometer from Sokoto state capital and also a birth-place of Sardauna of

Sokoto, Sir, Ahmadu Bello, Premier of Northern Nigeria where floods and erosion engulf almost all the Senior Secondary School is regret, as it disrupt learning in the only government owned Girls School in the area, that government has to relocate the School to Illela town, It is high time now that government allows itself to be in order for as lack of good care makes some officers to be responsible for jeopardizing the lives of these children. Some of them were seeing floating in the flood during this incident in the night. Our leader should keep vigil salvaging the lives of masses children to avert the destruction of property and lives; it is good to address the problem so that it would save a lot of people lives and properties. We hope that Minister Bala Mande, would work with the advise of his expertise and other people, so as to salvage his people in the north from floods, desertification and other man made disasters. He should remember that, like other gone Ministers before him in that office, he is leaving the seat one day, it is good for him to heed the advices given to him by the members of the National Assembly. He should help people in this problem and find lasting solution to it. On their part, the Honourable Members should keep the feeling of their constituencies at heart, and make sure it is acted upon, in a way that a benefit would be derived in the fight against desertification, and soil erosion menace in both this area the entire country. The Federal Government must use its power to pressurize state governments that were in the habit of diverting ecological funds on desertification and soil erosion, that they should utilize the funds judiciously, instead of deviating them on their personal needs, different from the intending projects. We should not forget the statement of President of the Nigeria Red Cross Society, who said "almost all the eighty percent of disaster befalling Nigeria today; are man made, that is, ourselves created them for either our selfishness or other reasons. Our country according to experts is still not ready for preparedness of disaster, no organized disaster management control. The disaster that we created to ourselves include lack of coordination of people continue bush-burning, building on waterways, and poor control of gully erosion. We cannot be compared with some countries that faced eighty percent natural disasters like Bangladesh, India, and China. In his visit to Sokoto recently the Speaker House of Representatives, Alhaji Aminu Bello Masari confirm their intention of assisting the North West to over come the issue of deserts and Soil control, which according to him still devastated the region than any thing. It is our collective responsibility to see the success of the crusade against desertification, and soil erosion initiated by those Honourables that are now prepared to face the bull by the horn, and take necessary steps in order to protect our people from such calamity.

### Chapter 8 : Desertification Monitoring: Is the Desert Encroaching?

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### Chapter 9 : Nigeria: We're Determined to Halt Desert Encroachment - Zamfara Commissioner - calendrier

*Desert encroachment and desertification are terms that are interchangeable, and in essence is the spread of desert conditions into habitable areas. This is normally most often demonstrated by the movement of sand dunes.*