

Biodiversity Conservation and Utilization in Nigeria



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Abstract

National Centre for Genetic Resources and Biotechnology (NACGRAB) is the national focal point for Genetic Resources Conservation in Nigeria. These include various plants and animals. The rate of biodiversity loss in Nigeria necessitate concerted effort in in-situ and ex-situ conservation of genetic resources. This biodiversity has various uses ranging from environment, food security, medicinal and cultural uses. The plants can be grouped into indigenous vegetable, medicinal, endemic, endanger and cultural etc. NACGRAB also has animal genetic resources as part of biodiversity being conserved.

Keywords: NACGRAB; Conservation; Biodiversity; Environment; Food security; Medicinal

Abbreviations: (NACGRAB): National Centre for Genetic Resources and Biotechnology; (FMST): Federal Ministry of Science and Technology; (ICRISAT): International Crops Research Institute of Semi-Arid Tropics

Opinion

There is general consensus that there is genetic resources and biodiversity loss in the world [1,2]. The losses in biodiversity are due to so many factors. These include fuel wood and charcoal, agriculture, bush burning, construction of roads, bridges and buildings, search for food, search for medicine, overgrazing by cattle, wars, terrorism, poor land management, displacement and loss of land races due to crop improvement and other factors, lower yielding varieties, environmental pollution, pests and diseases outbreak, inadequate knowledge of biology of many plants, urbanization and population growth explosion [3,4]. Nigeria is known worldwide as a country that has great biodiversity of plants. These plants could be exploited and used in several ways including culinary, medicinal, therapeutic and nutritional purposes [4,5]. The great diversity found in Nigeria is due to different ecosystems, habitats and tropical climate in Nigeria Borokini et al. [4].

The stakeholders in genetic resources and biodiversity conservation in Nigeria include Research Institutes, academic institutions, non-governmental organizations, national parks, game reserves and National Centre for Genetic Resources and Biotechnology (NACGRAB). However, NACGRAB is the national

focal point for genetic resources conservation in Nigeria. The National Centre for Genetic Resources and Biotechnology (NACGRAB) was established by the Federal Ministry of Science and Technology (FMST) through a Ministerial Fiat in 1987 as the national focal point for research data gathering and dissemination of technology information on matters relating to genetic resources conservation and utilization.

The programmes of the Centre include conservation, preservation and maintenance of valuable genetic resources (plants animals and microbes). NACGRAB, backed by Decree No. 33 of 1987 (now Act of Parliament, 2016) also regulates the Seeds and Livestock industries by coordinating the activities and meetings of the National Committee on Registration and Release of Crop Varieties and Livestock Breeds in Nigeria.

NACGRAB has about ten thousand accessions of seeds conserved in its short term and long-term gene bank. These seeds are sometimes regenerated to maintain the viability. Some duplicate samples of these seeds, especially sorghum and millet are kept in the Regional seed bank of International Crops Research Institute of Semi-Arid Tropics (ICRISAT) Sahelian Centre in Sadore, Niamey. About three hundred samples of sorghum seeds are also

kept in Svalbard global seed vault in Norway. Researchers and students from various higher institutions across North and South of Nigeria do access these germplasms for research purposes while farmers also do access these germplasms for planting.

NACGRAB also has over three thousand plant species conserved as live collections in about 12 hectares of land. Part of these plants are in-situ collections while part are ex-situ collections. There is a medicinal herb garden located on this land as well. The plants conserved in NACGRAB field can be categorized according to the utilization potentials and other factors. Some can be defined as indigenous vegetables. Examples are *Launaea taraxacifolia*, *Talinum triangulare*, *Telfairia occidentalis*, *Occimum gratissimum*, *Vernonia amygdalina* etc. Some can be categorized as indigenous and lesser exploited fruit trees Babatola and Adelaja [6]. Examples include *Chrysophyllum (Gambeya) albidum*, *Dialium guinense*, *Tamarindus indica*, *Spondia mombin*, *Treculia africana*, *Monodora myristica*, *Tetrapleura tetraptera*, etc. Some can be categorized as invasive aliens. Examples include *Gliricidia sepium*, *Tithonia diversifolia*, *Chromolaena odorata*, etc. Some are endemic. Examples are *Aspilia africana*, *Ageratum conyzoides*. Some can be termed mysterious according to superstitions. Examples include *Adansonia digitata*, *Crotons zambesicus*, *Erythrophleum suaveolens*.

NACGRAB also has collections of indigenous collections of animal genetic resources. These include West African Dwarf goat, Frizzle feather chickens, Naked neck chickens and also rabbits.

Conclusion

Nigeria has rich biodiversity that has potential for various uses ranging from environmental, food uses, medicinal importance, cultural uses, crops and animals' improvement.

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