

Figure 4: Opportunities for the development of NUS in the study area

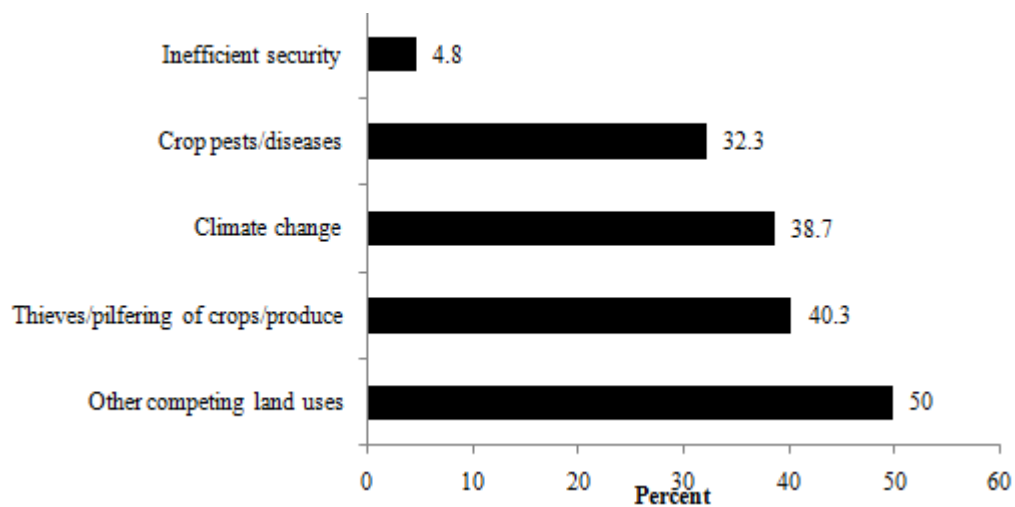


Figure 5: Threats to the development of NUS in the study area

4. Discussions and Policy Implications

Strategic development plan in an organization, industry, sector or sub-sector demands the setting up of goals and targets, identifying and consolidating on identified areas of strength, success or achievements as well as plugging up loop holes or possible areas of losses (Viruthiyel and Jonsson, 2008). To achieve sustainability in any development, policy issues should revolve sustenance of areas of strength with a view to adopting same as a possible institutionalized plan. In the result (Fig. 2), about half of the respondents (50.5%) enjoy accessible roads network in the area. It is reasonable to imply from the above result that about one in every two across the study area resides within an environment where transportation is limited due possibly to bad road network. This depicts likely weak management and culture especially in terms of maintenance of existing infrastructure and public utility. In Nigeria and to an extent in other developing African countries, road construction, rehabilitation and maintenance are exclusive preserve and mandate of the government. Public and private partnerships (PPP) can stimulate provision of utility and needed rural infrastructural services which in many instances show capacity of having positive multiplier effect on agricultural productivity and food security (NARSP, 1995).

More efficient local seed preservation methods to complement most times the conventionally open drying and smoking methods that can ensure longer seed viability and which does not require skills and expertise to handling as presented in Fig. 2 will improve sustainability in NUS cultivation. Communities and regions can be empowered by government to produce crops best adaptable in their respective and immediate areas/environments. The available fertile lands in the area, market linkages already available to the farmers and the huge values and utility which staple food provide are notable strength factors which should stimulate agro-exhibition and fairs for rural development. Exhibitions and fairs on domestic agro-allied products of local people have opened up trade linkages and promoted local development in many poor countries. Such exercise will open wider platforms for publicity and competitions which will translate into increased price returns for crop purchases, improved income for farmers, their households and their communities.

Improvements in access to information/awareness of local people are forms of capacity building. Ecological specialization which regrettably is not often considered in agricultural policy implementation has in this study been shown to be imperative for consideration especially for local agricultural development plan. This can form a major action

plan of local agricultural policy formulation. This involves the utilization of resources (human, natural, social and economic) in the planning processes and execution of programmes of local empowerment in an area where a given community or region has comparatively better advantage in than others. Again, with good planning and collaboration, monotechnic or similar higher institution with focus on agricultural and plant sciences will serve useful instruments towards providing the needed capacity, information access and support especially in terms of demonstration and popularization of such initiative. In the light of the above, as a progress marker to success in capacity building, the local farmers should be made to access needed services with minimal assistance, supervision and support. Such a capacity development/building will help surmount the difficulty perennially observed particularly in growing agricultural crops in season as well as off-season periods (Fig. 3).

Across most African communities, climatic variables are minimally optimal for crop/wildlife growth and performance. This is an area where botanists, plant/wildlife conservationists, foresters, crop geneticists and ecologists should cash in to take food production and security to the next level. Various promising varieties of fruits and vegetables have successfully been grown in harsher Australian climate which can be well domesticated in Africa (Morgan and Scholar, 2009). This is in addition to the low records of bush fire in Nigeria which are often a recurring decimal in other drier regions of Nigeria.

Although feeder/farm roads were reported to be in poor state (Fig. 3), proximity of respondents abode (settlement area) to market place should not be a sufficient reason to allow farm roads be in more deplorable condition. This will necessitate the establishment of Ecological Specialization Fund and broadening the mandate of the State and Federal Ministries of Agriculture, Departments of Rural Development and similar agencies/parastatals where they exist towards articulating and addressing key food production needs/challenges for different regions and areas. If production of these crops becomes high in the near future, there could be possibility of the region becoming an attraction point/hub for tourism, commerce, research and collaboration.

More importantly, having identified huge values in underutilized species to cure ailments and possibly be a remedy to most persistent and contemporary ill-health conditions particularly in the face of fake and adulterated synthetic drugs, biologists and agriculturists can now favourably partner with global, regional and national health workers to ensure popularization of these potential plant species.

5. Conclusion

The huge attention being focused on conventional food crops with their attendant low productivity and the neglect of other valuable crop alternatives is one of the many reasons for the growing food security dilemma across the globe and Africa in particular. Rightly put, the agricultural sector is one foremost sector which stands to benefit from SWOT research if promoted at different agricultural

processes and also at the different value-chain levels. Strength factors vary across communities and regions. This is same with weaknesses, opportunities and threats. In Mbaise region of Nigeria where significant records of NUS abound, development of functional small/medium scale cottage industries to process and increase value of the NUS cultivated and used as staple food will promote their use, conservation and further domestication. Again, collaboration and capacity building especially of the rural farmers should be stepped up through educational empowerment for instance establishment of agro-based institutions which is top identified weakness. The rural farmers seemed non-conversant with modern multiple land use practices which offer an integrated approach to check poor land management and minimize adverse and competing land use influences. This should be as a matter of urgent local policy discourse and supported by relevant government agencies to ensure its success.

References

- [1] Afolabi, I. S., O. N. Akpokene, D. V. Fashola and T. C. Famakin (2012): Comparative evaluation of the nutritive benefits of some underutilized plant leaves. *Journal of Nat. Prod. Plant Resour.* 2(2): 261-266.
- [2] Baker, L. R. (2013): Case study: conservation of sacred monkeys in Igboland, Nigeria. *Cross-cultural communication: comments and conservation.* 5pp.
- [3] Bello, M. O. (2013): Tackling hidden hunger: the potentials of some underutilized plant species. *UNU-INRA Seminar Paper.* May, 2013.
- [4] Bolorundaro, P. I. (2009): An application of the concept of SWOT analysis to the Nigerian fisheries sub-sector. *Annual Report of NAERLS,* Pp. 316-321.
- [5] Bryon, J. And W. Roering (1987): Applying private sector strategic planning in the public sector. *Journal of the American Planning Association* 53:9-22.
- [6] CERCOPAN (2002): The Primates: status and statistics. *Guenons and Mangabeys. Project Information Guide.* 2pp.
- [7] Coetzee, J. H. And M. C. Middelmann (1997): SWOT analysis of the fynbos industry in South Africa with special reference to research. *ACTA Horticulturae* 453: 145-152.
- [8] Essien, B. A., J. B. Essien, J. C. Nwite, J. U. Ogbu, S. N. Okereke and M. U. Agunannah (2013): Contribution of plant species in homestead farms to food security and sustainability in Ebonyi State, Southeastern Nigeria. *African Journal of Plant Science* 7(8): 317-324.
- [9] IFS (2012): IFS Collaborative Research Grants: Expression of Interest. *International Foundation for Science.* 2pp.
- [10] Meys, S., F. J. Massawe, P. G. Alderson, J. A. Roberts, S. N. Azam-Ali and M. Hermann (2011): The potential for underutilized crops to improve security of food production. *Journal of Experimental Botany. Advance Access, Food Security.* Pp 1-5.
- [11] Morgan, E. and F. Scholar (2009): Fruit and vegetable consumption and waste in Australia: recommendations towards a food supply system framework that will deliver healthy food in a sustainable way. *Victorian Health Promotion Foundation.* 58pp.

- [12] NARSP (1995): SWOT analysis of Indian agricultural sector. National Agricultural Strategy Plan, India. 138pp.
- [13] Nwachukwu, C. U., C. N. Umeh, G. Kalu, S. Okere and M. Nwoko (2010): Identification and traditional uses of some common medicinal plants in Ezinihitte Mbaise L.G.A. of Imo State, Nigeria. Reports and Opinion 2(6): 8pp.
- [14] Okeke, E. C., H. N. Eneobong, A. O. Uzuegbunam, A. O. Ozioko and H. Kuhnlein (2008): Igbo traditional food system: domestication, uses and research needs. *Pakistan Journal of Nutrition* 7(2): 365-376.
- [15] Sarumi, M. B., D. O. Ladipo, L. Denton, E. O. Olapade and C. Ughasoro (1995): Country report to the FAO International Technical Conference on Plant Genetic Resources: Nigeria. 108pp.
- [16] Sur, J. And N. F. Emtage (2006): Identification of strengths, weaknesses, opportunities and threats of the community-based forest management program. ACIAR smallholder forestry project. Pp. 159-170.
- [17] Viruthiyel, J. And G. Jonsson (2008): Strengths, weaknesses, opportunities, threats of HCFP Self-Help Groups. Haryana Community Forest Project. Forest Department, Government of Haryana. 16pp.

