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The Challenges of a Changing World : Perspective of Nigerian Women Scientists in

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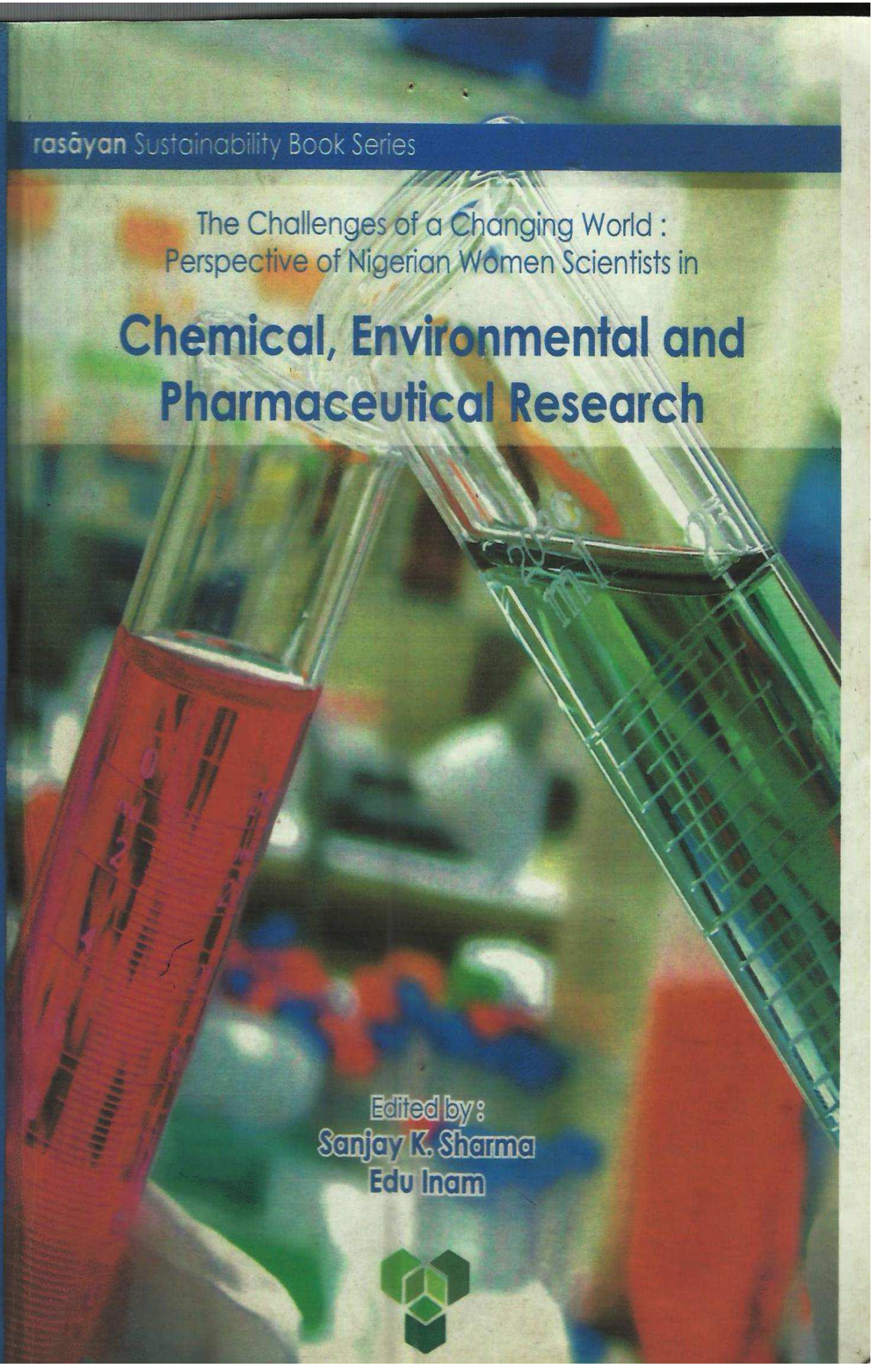

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Environmental Safety Policy Initiatives and Weed Management Practices among Nigerian Rural Women Farmers

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ABSTRACT
The aim of the study was to determine environmental safety policy initiatives for sustainable weed management practices among Nigerian rural women farmers with, a view to facilitate environmental protection. A survey study employing comparative research design was conducted in Akwa Ibom State of Nigeria. Research hypotheses were tested @p<0.05 and the research question was answered. The population consisted rural women farmers, staff of agricultural extension organization and agricultural professional in universities. The sample was 1,200 subjects drawn using stratified random sampling technique. Validated Questionnaire having a four point rating with the cutt-off point at 2.0, was used as research instrument. Mean and One-Way Analysis of Variance Statistics were used for data analysis. In the findings eight (8) environmental safety policy initiatives for weed management practices were determined, including,1) deployment of environmental specialists in rural areas to encourage adherence to healthy routines in chemical weed management' with the highest mean of 3.76, seconded by 'institutionalization of monitoring mechanisms in rural areas to ensure proper waste disposal in weed management in rural communities' with mean at 3. 44. The third was 'fire regulation policy to control incessant bush burning as weed control measures' with mean at 3.35 among other policies, No significant differences between research groups existed on the determined environmental policy alternatives.
Keywords: Environmental Protection, Policy, Rural Agriculture, Women.

INTRODUCTION

Women and their activities constitute the backbone of rural communities in most developing countries [8]. About 80% of women farmers are rural dwellers, living in non-sustainable economy, environments and engaged in non-sustainable practices in agriculture [7]. These practices constitute environmental harzard both with n the farmstead and beyond.

The issue of weed management is seen to be vital and imperative to land based agricultural activities. Weed Management is the application of strategic human efforts to manipulate weeds and their environments, so as to keep their population below levels that can cause economic losses or inconveniences to man [2]; [3]. In African societies, and particularly in Nigeria, women constitute the

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dominant group and play significant role in crop production. Traditionally, the weeding phase of the production process is seen as the responsibility of the women and their female children, in the rural communities. Women engage in non-sustainable weed management practices using crude implements and methods that are hazardous to the environment [7].

Various policy frameworks in Nigeria, on which agricultural programmes and schemes have been based and implemented, have not had direct focus on the rural women farmers, 'who feed the nations' and on their difficulties in sustaining the rural environment . Thus, the working and living conditions of the rural women continue to deteriorate [1]. For instance, In Nigeria, previous policy frameworks, such as the Farm Settlement Schemes, the Operation Feed the Nation Programme, the River Basin programmes, the Green Revolution of the Shagari civilian administration, "Go back to the Land" of Buhari's administration, and Babangida's Directorate of Food, Roads and Rural Infrastructure (DFRRI) had no specific concerns on rural women farmers and weed management.

Acquisition of skills in weed management is crucial for the women farmers, since they play significant roles in crop production. Nevertheless, The issue of maintaining environmental sustainability and health protection during weed management practices is vital. In recent years traditional system can hardly cope with food demands and sustainability of quality environment [10]. The panacea to effective rural development now, according [9] is to develop solutions to economic, political, social, and environmental problems that directly or indirectly influence agricultural productivity.

The women have need to protect the soil, air and their health while achieving maximized satisfaction in weed control practices thus the need for Environmental Policy initiatives. Environmental Policy initiatives within the context of this study means, alternative environmental guidelines or framework which would give direction to agricultural operations or programmes. Policy here refers to guidelines or that which suggests and gives direction to operational activities of an individual or a group of individuals, an institution or a programme [5]. It is an outline of concepts or framework on which programmes and schemes of the government is based.

It may be relevant to initiate alternative policies options to promote appropriate waste disposal or recycling and handling of herbicides in rural communities. Initiatives such as deployment of environmental specialist in rural areas, institutionalization of monitoring mechanisms in rural areas to ensure proper waste disposal during weed management in rural communities is needful. There are practices of incessant bush burning in the name of weed control which in some occasion destroy life and property. Fire regulation policy to control incessant bush burning as weed control measures and other strategic initiatives need to be put in place [8].

The importance of policy in agricultural development was recognized by the Food and Agricultural Organization s (FAO's) Global Consultation on Agricultural Extension, when it recommended that national governments should develop and constantly review their agricultural policies [11]. Agricultural policies should be reviewed and formulated through participatory approach, initiated by professionals from private and public sectors with active participation of the farmers themselves and should be relevant to the needs of farmers [12]. This study was therefore purposed to investigate a variety of Environmental Policy initiatives for possible implementation, with a view to provide input for sustainability of food security, Nigerian rural women farmers and their environment.

It is anticipated that, the findings of this study would serve as relevant input and source of advice to the agricultural policy formulation and implementation mechanisms, such as the extension organization, Ministry of agriculture and programmes designers in agricultural developments. They too would be better equipped to assist and give direction to rural women farmers in planning and implementation of programmes directed towards sustainable weed management. One (1) research question formulated to guide the study was "what are the environmental safety policy initiatives that could enhance rural women farmers' skills acquisition in sustainable weed management practices?" Null Research Hypothesis postulated and tested at 95% probability level was "*There are no significant differences in the mean rating*

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of response of the three groups of research participants, on each of the selected environmental policy initiatives for rural women in sustainable weed management."

MATERIALS AND METHODS

A survey study employing comparative research design was conducted in Akwa Ibom State of Nigeria. The population comprised the rural women farmers, staff of agricultural policy instruments (extension organization,) and agricultural professional drawn from universities within the area of study. Stratified random sampling technique was used to draw the research participants to achieve a fair representation of the components of the population of study.

A study sample of 1,200 subjects was constituted, made up of 660 women farmers, 420 extension workers and 120 professionals. Validated Questionnaire with a four point rating scale and the cut-off point at 2.0 was used as the benchmark for decision taking. A test retest method of reliability proof was used to determine the reliability of the instrument. The reliability coefficient (r) was determined using Pearson Moment correlation. The reliability index ranged from 0.86 to 0.92 which was high enough. The instrument was therefore administered by the researchers and 92% returned rate was obtained. Each of the research hypothesis was tested @$p<0.05$ and one research question was answered. Mean, standard deviations and One-Way Analysis of Variance Statistics were used for data analysis.

RESULTS AND DISCUSSION

What are the environmental safety policy initiatives that could enhance rural women farmers' skills acquisition in sustainable weed management practices? Table I indicates that ' Policy initiative on Deployment of environmental specialist in rural areas would encourage adherence to healthy routines in chemical weed management' ranked first with mean at 3.764, seconded by 'Institutionalization of environmental monitoring mechanisms in rural areas to ensure proper waste disposal in weed management in rural communities' with mean at 3.449 and followed by 'Policy on Fire regulation policy to control incessant bush burning as weed control measures' with mean at 3.352 Adoption of Litter control measures would improve their ability to minimize site degradation, Mounting of environmental safety awareness campaigns in the rural areas on women farmers' occupational nuisance and ways of reducing the nuisance.

In Table 2, the calculated value of F- ratio in all the items were being less than the critical value of F at 95% confidence level, the null hypothesis is therefore upheld. It is concluded that, there are no significant differences among the women farmers, extension staff and professionals in the mean rating of their responses on selected environmental policy initiatives for women farmers' skill acquisition in sustainable weed management. The findings of this study are in consonance with those [9] and [12] who emphasized Integration Environmental and Sustainable Development themes into Agricultural Education and Extension Programmes. There are global concerns in recent times on environmental safety and sustainability of the environment. It is worthy of note that, successive governments in Nigeria have formulated related agricultural policies and implemented same through various agricultural and rural development programmes, which have not improved the living standards of rural women nor enhance sustainability in farming practices , specifically weed management skills. Policies options for achievement of environmental safety in the process of weed control in rural areas would enhance sustainability of the environment. Soil protection in weed management is relevant for sustainable development [6]. Skills in waste, dust and odour control is relevant for women farmers' health. Policy on provision of dust suppression systems and Litter control measures to minimize site degradation would boost skills acquisition in weed sustainable management. Women farmers need to stay healthy to 'feed the nations.' .

Promulgation of fire regulation policies for women in rural communities would aid avoidance of incessant bush burning as weed control strategy. Women farmers need to have knowledge of the evils of incessant bush burning Cain [4]. This would lead to safety of the environment and humans.

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Institutionalization of monitoring mechanism would to ensure proper waste disposal. Awareness Campaigns need to be mounted in the rural areas on women farmers' occupational nuisance and ways of reducing the nuisance. Policy on provision of noise control gadgets to keep the farmers free from nuisance would further contribute to environmental sustainability. Policy on deployment of environmental specialist in rural areas would promote the women farmers' adherence to healthy routines in chemical weed management. Consultation would be made to the environmental specialist for clarifications on environmental policies, during and after weed management practices.

CONCLUSION

The issue of weed management as well as sustainability of the environment are of prime importance and have attracted global concerns in recent years. The findings of this study therefore provide some relevant input for competency in environmental sustainability, farmer education, and effective planning and execution of farming skills acquisition programmes for rural women farmers. If agricultural policy planners adopt the environmental policy initiatives investigated in this study, it is believed that this will reduce the problems encountered in weed management by rural women farmers 'who feed the nation' and the rural environments and the dwellers would be better sustained.

Table-1: Environmental Policy Initiatives for Rural Women Farmers Skills Acquisition in Sustainable Weed Management Practices

Environmental Policy Initiatives for Rural Women Farmers Skills Acquisition in Sustainable Weed Management Practices	Mean	Remark	Rank
Deployment of environmental specialist in rural areas to encourage adherence to healthy routines in chemical weed management	3.764	*	1st
Institutionalization of environmental monitoring mechanisms in rural areas to ensure proper waste disposal in weed management in rural communities	3. 449	*	2nd
Fire regulation policy to control incessant bush burning as weed control measures	3..352	*	3rd
Adoption of Litter control measures to improve womens' ability to minimize site degradation.	3..212	*	4th
Mounting of envronmental safety Awareness Campaigns in the rural areas on women farmers' occupational nuisance and control.	2.851	*	5th
Establishment of sustainable weed management demonstration centres for skill acquisition.	2.650	*	6th
Policy initiatives on soil protection techniques among would enhance ability to protect the soil during weed control	2..575	*	7th
Policy on provision of noise control gadgets to keep the farmers free from nuisance	2.118	*	8th

*Accepted environmental policy initiatives for rural women farmers' skills acquisition in sustainable weed management practices using 2.0 point as the benchmark.

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Table-2: One-way Analysis of Variance (ANOVA) for Comparison of Mean Responses of the Three Research Groups on Selected Environmental Policy Initiatives.

Selected Environmental Policy Initiatives	Mean	F- ratio	P@< 0.05	Remark
Deployment of environmental specialist in rural areas to encourage adherence to healthy routines in chemical weed management	3.764	1.036	2.872	NS
Institutionalization of environmental monitoring mechanisms in rural areas to ensure proper waste disposal in weed management in rural communities	3. 449	1.109	3..375	NS
Fire regulation policy to control incessant bush burning as weed control measures	3..352	1..281	3.011	NS
Adoption of Litter control measures to improve womens' ability to minimize site degradation.	3..212	1.401	3..548	NS
Mounting of envronmental safety Awareness Campaigns in the rural areas on women farmers' occupational nuisance and control.	2.851	1..357	2.802	NS
Establishment of sustainable weed management demonstration centres for skill acquisition.	2.650	1.332	2.790	NS
Policy initiatives on soil protection techniques among would enhance ability to protect the soil during weed control	2..575	1.402	3.451	NS
Policy on provision of noise control gadgets to keep the farmers free from nuisance	2.118	1.359	2..976	NS

NS = Not significant; N=Significant.

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