IMPACT OF PESTICIDES' USES& CHALLENGES FORITS MANAGEMNT IN AGRICULTURE: A CASE STUDY OF HARAYANA

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Abstract

The primary aim of this paper is to acquaintance of pesticides was with anticipating and controls insect pests and diseases in the field crops and obviously, initially the utilization of pesticides decreased pest attack and cleared the way to increase the crop yield not surprisingly. Simultaneously, expanded utilization of chemical pesticides has brought about defiling the environment and the long-term suggestions on the society are observed to be many. Knowingly or unknowingly, now the farmers are dependent on utilizing agrochemicals indiscriminately and excessively to influence the circumstance from awful to more awful too in India as well as in different parts of the world too. A harsh gauge demonstrates that around 33% of the world's agriculture production is lost every year because of pests notwithstanding the pesticide utilization which totalled more than 2 million tons.

1. INTRODUCTION

The pesticide-related issues have been increasingly and extensively featured in the media including research diaries and have attracted sharp concentration among the policy creators in India and somewhere else as well. Unpredictable and extreme utilization of harmful synthetic pesticides damaged environment and agriculture as well as went into the food chain thereby influencing every living being. The current research discoveries on the nearness of pesticide particles in the bundled water are great cases calling attention to the nature and size of the problem. Pesticides, herbicides, and fungicides have been presented during the mid-sixties on an extensive scale along with different contributions for proliferating green upset bundle in Indian agriculture.

In India pests cause crop loss of more than Rs 6000 crores annually, of which 33 percent is because of weeds, 26 percent by diseases, 20 percent by insects, 10 percent by flying creatures and rodents and the restof the (11 percent) is because of different factors. The size of the problem would quicken further as to an ever-increasing extent (more up to date) pests, and diseases are likely to attack crops and the need to utilize pesticides in various structures will be necessary for the years to come. The basic plan types of pesticide are fluids, wet table powder, emulsifiable

focuses and tidies, and the usage of pesticides goes into the environment and has many diverse destinies.

The pesticides have harmful impacts like conceptive, teratogenic, mutagenic and cancer-causing and also on ecology, including non-target plants and creatures like honey bees. Unless most extreme care is taken to utilize the pesticides rationally, the above toxicological and environmental impacts will undoubtedly happen, and if such pesticides were connected continuously for a considerable length of time, the molecule concentration in the soil and water would make antagonistic complex problems. The FAO assessed that in the vicinity of 1960 and 1995 the early development of the worldwide pesticide advertises was 11 percent and it is required to become quicker in coming years [1].

Initially, chemical pesticides were connected to grain crops, and now they are increasingly utilized because of increment in pest and disease attack on different crops too. The International Food Policy Research Institute (IFRRI) evaluated that pesticides have been largely utilized now on fruits and vegetable crops (26 percent) trailed by rice and maize (23 percent) and the staying on every other crop.

Table 1: Agro-Chemicals Use by Stage of Agriculture and Cropping System

Farm characteristics	Cereals (e.g., rice)	Cropping system Other filed crops (e.g., cotton, tobacco)	Agriculture (e.g., fruits and vegetables)
Land abundant Subsistence	All chemicals None	All chemicals None to low	All chemicals None to low
Land Scarce Subsistence	Insecticides Low to moderate	Insecticides, fungicides Low to moderate	Fungicides Low to moderate
Land abundant Market oriented	Herbicides Moderate to high	Herbicides, fungicides Moderate to high	Fungicides, herbicides Moderate to high
Land scarce Market oriented	Insecticides, herbicides High	All chemicals High	All chemicals High

The above table 1 shows that agro-chemicals are utilized on an extensive scale for all crops under a market arranged farming system. Under subsistence farming situations farmers tend to utilize less quantum of pesticides as they view production as adequate to meet the local necessities.

2. IMPACT OF PESTICIDE USE IN HARYANA

Green vegetables have been distinguished with pesticide residues, and their health impacts were uncovered in the territory of Rajasthan. All the more important, the relegations of agriculture wares like tea, egg powder, and cashew portions have been

dismissed on the conflict of chemical tainting and nearness of pesticide residues by European countries. A current report from largely the stew delivering province of Andhra Pradesh demonstrates that dry chilies to have pesticide particles and the shippers declined to acknowledge the relegation. Normally since dry chilies are not washed while cooking, no big surprise that the purchasers need to pay heavily as far as sick health and health mind over the long haul.

In Haryana, the Central Food Technological Research Institute's study demonstrates that of 204 examples of oats, beats, drain, eggs, meat and vegetables. The problem of chemical pesticides isn't confined to Haryana alone; even created countries confront this problem. Only one out of hundred subjects do not carry DDT in his/her body. Nearly 500,000 sicknesses and 20,000 passing's can be credited annually to chemical pesticides worldwide. As indicated by a gauge made by the WHO, every year 3,000,000 instances of pesticide poisoning including 220,000 passing are accounted for over the globe. Similarly, the use of pesticides has caused environmental and social cost in Brazil, where exchange advancement urged the farmers to utilize them on exportable crops for economic increases [2].

These discoveries give enough proof and qualifications to contend that under the market economy administration and consumerism, rural goods that carry pesticide residues would have brought down request over the globe. Subsequently, this issue needs genuine consideration and speedy action for social, environmental and economic contemplations with regards to feasible development. Regardless of these, supporters of agrochemicals are careless and contend that to control pests and diseases in light of a legitimate concern for increasing food production, chemical data sources can't be limited not to mention halted. As indicated by them, without chemicals, it is very impractical to build food production in the short run, and they contend that in light of Haryana accomplished independence in food grains production.

Further, it highlights the present lawful provisos and furthermore gives a few systems to defeat the circumstance in the bigger structure of maintainable agriculture development (SAD) and food security. Various research contemplates in Haryana have concentrated on the impact of agrochemicals in a more broad point of view. Notably, a large portion of these investigations have been directed by the voluntary sector and obviously later (after a progression of consultations and at times solid reactions) by the state-supported research organizations.

In Haryana contemplates on environmental impact of the transfer of empty compartments are scanty and this calls for prompt consideration of researchers. The legitimate viewpoints for pesticide permitting and promoting are very ambiguous in Haryana and furthermore

interdepartmental participation and coordination are very poor. For example, if a specific pesticide substance is discovered problematic at later stages, it will set aside a long opportunity to suspend the same as an intricate strategy is included. Similarly, because of different authoritative and different reasons, open intrigue prosecution on pesticide manhandle takes a prolonged course in the courts for a decision [3].

3. CHALLENGES AND OPPORTUNITIES FOR RAISING AGRICULTURAL PRODUCTIVITY IN MALAWI

Malawi is one of the slightest created countries in the world where the rate of poverty is relatively high. The Human Development Index for 2010, which is a mix of three sub-files covering riches, health and education, positions Malawi lowly at position 153 out of 169 countries surveyed On the other hand, the country gauges in view of the national poverty line demonstrate that 40 percent of the masses acquire/spend not as much as the edge. Agriculture remains the primary motor for economic development and development for the country. This implies poverty diminishment endeavors in Malawi need to put critical accentuation on improving agriculture productivity development.

The researcher centres on examining the challenges and open doors for bringing farming productivity up in Malawi inside the extent of AgR&D. In this research, we contend that in spite of the fact that agriculture remains the primary motor for economic development and poverty diminishment in Malawi, the sector has not gotten the necessary help regarding speculations for Research and Development. A significant part of the research has been benefactor driven. Also, while we recognize some innovative achievements, feeble expansion delivery systems combined with questionable or non-working markets have plotted to restrict the potential increases interpreted through agriculture productivity [4].

Agriculture possesses around 56 percent of the land zone covering 5.3 million hectares of the country's 9.4 million hectares and supplies no less than 65 percent of the manufacturing sector's crude material necessities. The agriculture sector in Malawi is dualistic, comprising of little-scale farmers and the bequest sub-sector. These sub-sectors could be seen as the key homestead types in the country. The sub-sectors have been historically recognized based on lawful and established standards managing land residency, type of crops developed and advertising game plans. The smallholder sub-sector (smallholder cultivate type) depends on customary land residency system and is primarily subsistence. Land residency is the reason to arriving allotment and proprietorship. Land in Malawi can be separated into three primary fundamental classifications:

(i) Public land,
(ii) Private land, and
(iii) Customary land.

The primary crops developed by smallholder farmers are tobacco, maize, Irish potatoes, groundnuts, beats, sweet potatoes, cassava, sorghum, rice, sunflower, wheat, vegetables, fruits, espresso, macadamia, cashew, and flavors. Maize, as the staple food, is the essential crop of the Malawian population and possesses 65 percent of the total land developed by smallholder farm types. The highest measure of land under maize is in Lilongwe Agriculture Development Division (ADD) the principle food bushel. In Malawi, and the perfect of creating enough maize to meet family unit food needs "educates everyone's actions and bases for their actions previously, during and after the maize collect."

4. CHALLENGES IN PEST MANAGEMENT IN AGRICULTURE

The significant objectives of agriculture worldwide are to produce adequate food for the developing population, to create salaries for farmers and to help the Gross Domestic Product through the agriculture industry. With the increasing urbanization, there is a relating expanded interest for food by the urban population, which is itself not directly engaged with crop production. Haryana has a relatively substantial rural population, comprising mainly of little holder farmers whose commitment to the economies of individual countries is highly critical. Be that as it may one of the significant limitations in crop production in Haryana is the harm caused by diseases and pests, particularly arthropods, vertebrates, and weeds.

In every single world economy, wherever new advancements and high innovative data sources have helped farming production, pest problems have expanded or have turned out to be more serious. Worldwide these pests represent misfortunes of around 36% of the potential yield, and away, another 14% of the potential yield is lost. Haryana has encountered many changes in agriculture over the most recent five decades, through a change in farming systems, pest and disease management and expanded yield of both staple and money crops. These pests are controlled mainly with pesticides when these are accessible [5].

The reason for the section is to centre around pest management techniques and the challenges previously us, particularly on plausible research and innovations that can be utilized to decrease the harm and misfortunes caused by pests Agriculture, which created as man transformed from a natural product authority and seeker to crop production, has always confronted the danger postured by pests. The most punctual endeavours to control insect pests utilizing pesticides included the consuming of "brimstone" (sulfur) as a fumigant. As recently 1940, pesticides supply was restricted to a few arsenicals, oil oils, nicotine, pyrethrum, rotenone, sulfur, hydrogen cyanide gas, and cryolite. During the World War II, the chemical period was opened with the presentation of a new idea

of pest control chemicals, namely the synthetic organic chemicals. The accomplishment of the organic synthetic pesticide industry has prompted assorted chemicals being produced in huge sums.

These included development of protection, secondary pest episodes, pest resurgence and toxicity to man and other non-target organisms. These restrictions prompted the withdrawal of a portion of the pesticides and the development of substitutes, which at times were more dangerous. The Silent Spring realized mindfulness among researchers, lawmakers and the general population on the unfavourable impacts of pesticides on the environment. This denoted the start of another time on our way to deal with pest management. In this way, more consideration was focussed on elective methodologies, including natural control, social strategies and integrated pest management (IPM) [6].

5. CHALLENGES FACING THE AGRICULTURE SECTOR

Major challenges facing the sector include production volumes and efficiency. Lack of infrastructure and support services hamper production but are themselves a result of a number of systemic gaps. Many of the production farms are scattered apart making it difficult to provide services such as roads, electricity, water, telecommunications and extension services [7].

- **Access to water**

Nearly the greater part of the grain is produced through rain-encouraged agriculture. This dependence on precipitation influences production as untrustworthy as the precipitation it intricately relies upon. Soil dampness maintenance is low in many of Haryana's soils. This is likewise exacerbated by soil hardening and layering coming about because of second-rate working advances. This challenge of restricted soil dampness severely confines rain fed agriculture in Haryana.

- **Land use planning**

The allotment of rural land has been client driven with restricted arranging at community of region level on the area of different types of production system. This has made development of help foundation virtually unfathomable. The execution of National Master Plan for Arable and Dairy Development (NAMPAADD) and related projects went for improving productivity and access to sources of info and markets will accomplish better outcomes if the land utilizes arranging focuses to gather activities of comparable nature as this will lessen the expenses of supporting framework.

- **Livestock production**

Domesticated animals have remained a critical sub-sector mainly because of the steers industry. The primary challenge is the frail linkages with business sectors. An expansion benefit in its present state is

focusing on production and less on utilization. Where it has, the prime markets have been difficult to reach as a result of the sporadic supply and the distinctions in size of creatures being butchered. Different challenges, influencing the wide scope of farm creatures are the absence of grouping of production focuses. These influence the ability to get to basic administrations, for example, water, energy, expansion administrations, markets and item trade (e.g. poultry excrement and cultivation).

- **Gender and agriculture**

Access to arrive is the one region where advance has been noteworthy and has coordinate positive ramifications for address sexual orientation incongruities in the rural sector. This has been made conceivable by legitimate changes on legacy and conjugal laws. Various systemic holes however hold on; including energy arrangement for extraction of underground water required for domesticated animals, and absence of social administrations (health and education) that will enable women to occupy production arrive while seeking after their different parts of youngster mind.

6. INDIAN AGRICULTURE, MAJOR RISKS AND ITS MANAGEMENT

At the time of independence, the farming economy of the nation was characterized by a dormant economy with wide regional diversities, lower resource accessibility, inadequate institutional support and acute poverty. The period preceding independence was marked by the retrogression of the agriculture sector and ended by leaving the nation with perhaps the world's most refractory land problem.

Land reforms were taken up as an immediate measure to correct the skewed circulation of land and inadequacies in the land market. Land reforms were directed towards favouring the peasant cultivator through tenancy reforms, nullification of intermediaries and getting equity access to arrive and other resources.Farming phases are exposed to controllable and uncontrollable dangers. Controllable dangers are pests, diseases, weeds, seed and broken fertilizers or pesticides. Uncontrollable dangers are a deficit or excess rainfall, dispersion of rainfall, extreme temperature conditions, hail storms, wind speeds, mugginess, and haze, etc. Technology, effective checking, and usage of data sources mitigate the controllable hazard [8].

- **Risks in agriculture**

In a universe of rising population, lessening arable land, mounting agriculture debts and increasing uncertainties in cultivating incomes, there is a great need for management of dangers in the agriculture sector. The enterprise of agriculture is subject to great numerous uncertainties. More people in Haryana earn their livelihood from this sector than from every single other sector set up together. In rural India, households that depend on income

from agriculture (either self-employed or as farming work) accounted for nearly 70% of the population.

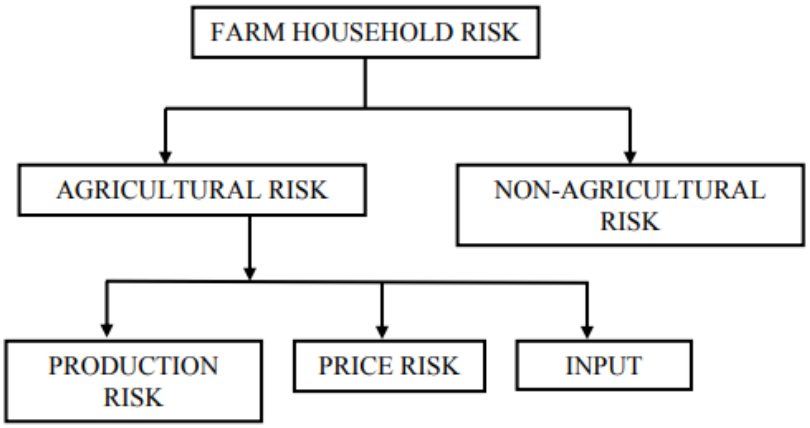

Figure1: Risks in Agriculture

- **Types of risks**

Management of risk in agriculture is one of the major concerns of the decision makers and policy planners, as risk in farm output is considered as the primary cause for low level of farm level investments and Indian distress. The diversities in the sources of risks require a variety of instruments for protecting the farmers. In Haryana, these include crop insurance, rainfall insurance, farm income insurance and a calamity relief fund. Most of these measures other than crop insurance are in the experimental stage. Different sources of risk that affect agriculture are classified below [9].

- Production Risk
- Price or Market Risk
- Financial and Credit Risk
- Institutional Risk
- Human or Personal Risk
- Legal / Policy Risk
- Resource Risk
- Health Risks
- Assets Risks
- Technology Risk

7. CONCLUSION

This paper has given a comprehensive expose of key challenges and opportunities for rural efficiency development in Malawi. It has also raised a number of issues that define the current R&D landscape for Malawi. Firstly, despite the way that agriculture is the engine for economic development for Malawi's economy, R&D seems not to be a key need area of emphasis in terms of research subsidizing. A significant part of the research carried out by the DARS as well as the Universities is benefactor funded. This does not depict a healthy R&D situation for the nation. Discontinuity of benefactor support entails no research for the well-organized R&D system in the nation.

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