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Make in India for Agriculture vs Corporatization

B B Mishra*

Bihar Agricultural University, India

***Corresponding Author:** B B Mishra, Bihar Agricultural University, India.

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Abstract

Agriculture in India is facing challenges associated with execution of planning and management. Even if we ignore the reality, we cannot ignore its consequences. In true sense, agriculture suffers from critical missing linkage, wherein there is hardly any reliable road map due to isolated planning options. Productivity in agriculture is a function of complex system that is accomplished in specific set of components on a healthy soil resource as a foundation under the secured land ownership. Agricultural education is by and large the sole key factor to install fruitful research in order to answer the researchable problems very relevant and specific to a given location and agro-eco-system. Integrated farming research without following the basic principles of land use planning is merely a showpiece. Entrepreneurial skills among farmers need to be introduced for both land owner and landless farmers. To get nutritious food, pure water and clean air, we have to insure a healthy agriculture environment. If system approach is followed, farmers with skillful farming approach and smart marketing options may enjoy the gross happiness besides poverty alleviation. Shrinkage of land that also relates to soil sealing due to non-farming activities is a curse towards climate change. Flood water is a huge natural resource to be captured for water security. Let's soil types and clay minerals be specifically used as protective source of medical treatments too. The chances of farmer's suicide would preferably come to its end with appropriate land use planning in a big way. The cumulative exercise would then help in developing a target oriented road map of agriculture for a given region or the country as a whole following a beginning of corporatization at the farmer's door. There is thus need to establish the "*National Land Use Planning Commission*" on way to work for corporatization with farmers.

Keywords: *Agriculture Education; Poverty Alleviation; Corporatization; National Land use Planning Commission*

Introduction

If no air is available to breathe and no water to drink, could we imagine for human life? If food grains and other food stuffs are stored by growers or farmers under direct control, how could we get food for survival and nourishment without farmer's willingness? Let the farmers believe the truth of this mystery with human's existence, wherein their role is instrumental. However, if farmers are neglected or underprivileged, it is solely because of their poor exposure to professional, entrepreneurial and technical skills. India is virtually an agriculture based developing country with around 1.20 billion human population. The well timely slogan of "Make in India" by Indian Prime Minister Mr. Narendra Modi forms a noble sense of commitment in respective field of interest, wherein agricultural development reasonably attains top priority. No industrial or other development can be meaningful and sustainable without due attention to agricultural development in a country. So, the concept of "Make in India" must include restructuring and updating of the shape of agriculture in such a way that may enable the agricultural products competitive in global markets besides satisfying the national food demands in quality term. This issue is challenging in many facets starting from higher education and research at college and university levels. The ultimate goal rests on projection of challenges as well as opportunities in different sectors of agriculture in order to enthusiasm students towards education with commitment. Education management must create a culture that could strengthen the commitment, motivation, enthusiasm, creativity, excitement, flexibility and opportunity through linkage to provide enough options to grow in diversified directions of specific field in agriculture.

India does possess predominantly an agricultural based economy, wherein food production accounts for 26% of national GDP. Here, agriculture accounts for more than 60% of national employment. In a projected estimate, agriculture is growing only at 3.3% compared to industry that grows at the rate of 7.5% a year. There is tremendous scope in India to transform agriculture into corporate sector. Based on reports (http://www.makeinindia.com/sector/food-processing/), India ranks first in the world (in 2012) in the production of bananas, mangoes, papayas, chickpea, ginger, okra, whole buffalo, goat milk and buffalo meat. India ranks second in the world in the production of sugarcane, rice, potatoes, wheat, garlic, groundnut (with shells), dry onion, green pea, pumpkin, gourds, cauliflower, tea, tomatoes, lentils, wheat and cow milk. Besides, the country's gross cropped area amounts to199 million hectares with a cropping intensity of 140%. The net irrigated area is 89.9 million hectares with a total of 127 agro-climatic zones identified. India's food processing sector ranks fifth in the world in exports, production and consumption. Major parts of the food processing sector are milled grain, sugar, edible oils, beverages and dairy products. It is further to note that India stands second in fruit production after Brazil and similarly second in vegetable production after China. In a general estimate, about 33 million tonnes of fruits and almost 70 million tonnes of vegetables are annually produced in India following a global market share of about 11% and 17.5%, respectively. However, the fruits and vegetables are processed only to an extent hardly of 1 to 2% in India as compared to 70 to 80% in developed countries. Thus, there is a wide gap full of challenges that need opportunities to overcome in almost all sectors of Indian agriculture. The Government of India is, of course, offering incentives in agricultural fields, but there is need of transformation.

As a matter of fact, almost 80% of rural population contributes to the development of agriculture in different directions in India. However, the continued speedy process of urbanization in India has resulted in migration of rural people to the urban areas for non-farming business. Besides, the in-equilibrium between industrial and agricultural wage pattern and structure resulted into unrest and frustration which manifests in the form of violence and sufferings. The aim of this paper lies with the fact that traditional system in agriculture must get transformed for gross rural happiness in livelihood.

Transformation in Agricultural Education

Opportunity is an outcome of necessity as well as creativity. Agricultural education suffers from stereotypic course curriculum, wherein comprehensive learning is more or less far from the truth. The said learning lacks system approach of knowledge being imparted to students through practical based conceptual trainings and more often suffers from completeness. Medical science relates to repairing and maintenance of human body and restoring of a sound health. Any health problem of human being calls for immediate attention and treatment. That's why medical students rest on proven practical knowledge that makes them more sincere and enthusiastic for learning and training. Likewise, engineering students work on aspects like luxury, comfort, energy generation, information tools, traveling, recreation and industry, for which there is tremendous demands and opportunities all over the world following a deep sense of attraction among students and technocrats for engineering. Unfortunately, the agriculture being the sole enterprise for nourishment and survival of humans is in general least cared as a profession. But, why is such ignorance? Where is the missing linkage hidden? Agricultural education suffers truly from lack of completeness of knowledge and works on a stereotypic framework that is prescribed in differing modes of isolation. So, there is need to define location specific opportunities for a teaching and learning tool in agriculture and the teachers are solely responsible to shoulder such accomplishment in a class room, college or university as well as in the fields. One of the ultimate goals of agricultural education and research is to move forward towards corporate sectors in such a framework that insure poverty alleviation in the farming communities through enhancement in productivity, profitability and sustainability. Obviously, one has to link such teaching and learning approach with agri-business and entrepreneurial skills in a big way. Importantly, this requires opportunities that can be enthusiastically injected in the mind of a student and that too by the teacher in a true farming environment, where farmers are the true witness.

Education is merely an everlasting means to design a lifestyle that must be healthy, sociable, peace loving and productive on sustainable basis following a creative vision that needs to be captured with some competitive goal. Agricultural education is applied in three tiers viz. student, teacher and farmer to work for opportunity. Higher education aims at accomplishment of five basic components viz. innovating (a) the student's individuality so that (b) originality in mindset could be promoted for subsequent enrichment in (c)

creativity, which accelerates the sense of (d) competitiveness so that a student, in the field of interest, could successfully get (e) employment/placement/business assured across the globe. The above five indicators of completion in education do work under assumptions including smart infra-structures and so. Teachers must get empowered on creative expression in the class. Creativity and employability through practically proven tools promote the student's conceptual understanding. Such tools equally help to promote better grasp of the theoretical concept even and accelerate the power of overall understanding. Creative and fresh idea must come from individual instead of cascading from the top. The agricultural education deals with topics full of risks and limitations mostly in open and uncontrolled surroundings. So, the emphasis on creative expression in agricultural education must be nurture in write-shop session using the basic digital media skills and so, but under a well knitted umbrella full of opportunities. By and large, the education in agriculture must be location specific in a given "soil-water-climate-vegetation-livestock-human being" continuum, a complete system controlling the overall supply chain for livelihood under natural set-up. Unfortunately, our efforts in true sense are almost ornamental suffering from approximation and missing linkage. The traditional academic approaches with latest scientific and indigenous knowledge must also be well taken at least in conceptual framework through practical sessions so that the students may get fully exposed to the relevance and practical implication of the topic in a powerful teaching and learning system. After all, students have to accept the bare truth of wisdom through "seeing-doing-believing mechanisms" and grasping to apply in days to come for "market based agricultural production and development on sustainable basis". This necessitates a target oriented reform in governance of higher agricultural education on strong infrastructure and teaching-learning mechanism.

The course curricula must be demand driven and practical oriented with a clear message of sustainable production in all sectors of agriculture, wherein agro-eco system, soil, water, air and seed are the resources that include production inputs like tillage, irrigation, nutrition, health protection and maintenance following the associated technologies for breeding, mutation, mitigation of disastrous consequences, soil fertility management, plant protection and processing of harvested produces. Importantly, each course session in different disciplines must convey a powerful message towards overall goal that links the rural markets through production process, demand oriented, supply assured and profit anticipated. Such trainings would surely empower students towards positive opportunities for placement, employment, self agri-business and entrepreneurial skills.

Agricultural Research

The simple definition of any scientific research is to perform a methodical study in order to establish and prove a hypothesis or answer for a specific but relevant question. Such answer would be the central goal of an experiment. The research must be systematic following a set of steps. Agriculture works almost in open system and so it is full of risk, fear, uncertainties, doubts and limitations. Management strategies for agricultural production must be based on a reliable skill of input integration through step by step evaluation of resources involved. Soil, for example, is a basic resource contributing as the foundation to sustainable production and its evaluation for actual as well as potential productivity must be undertaken well before suitability identification of land use choice. Research priority in Indian agriculture is virtually a mandatory compulsion following some publication, but the research outcome and recommendation in most cases are least relevant and even seldom reliable. Agricultural scientists may often claim for a huge number of publications to his credit, but hardly for any reliable recommendation or finding. Even Albert Einstein had not so many publications. More often research projects are awarded either on seniority or reservation basis and mostly suffer from misinterpretation of basic principles, methodology and evaluation on time scale viz. logframe matrix. Such bitter situations in many cases have made the research environment uncertain in agriculture. In some instances, research problems being proposed and identified are not truly researchable, even though students are carrying out such research works mainly to fulfill the requirement of a degree without learning much about tips and methodology of conducting a research.

Soil as a Building Block in Sustainable Agricultural Production

The healthy soil is truly a foundation of global food production, security and safety [1]. Soil is not only the medium for biomass production, but also the storage tank for heat energy, water, plant nutrients and waste matter of the environment. It is a natural filter and detoxificant besides being the high capacity buffer system. The effects of management practices, pesticides and heavy metals on soil enzymes are of current interests. The effect of heavy metals including arsenic needs also to be quantified. Similarly, the capacity of a soil to

absorb carbon dioxide needs to be reassessed. The soil carbon could be stored if they are protected against microbial degradation. Such protection is provided by formation of clay humus complexes even. Thus, clay science needs to be prioritized and promoted more than ever before in order to quantify various modes of identification, interactions and reaction products that could be easily understandable in soil science. Clays work as the true heart of a soil and are instrumental in soil management options specific to agriculture. The soil microorganisms, on the other hand, are the major component of biogeochemical nutrient cycling and global fluxes of CO2, CH4, and N. The world's soils are estimated to contain twice as much carbon as the atmosphere, making them one of the largest sinks for atmospheric CO2 and organic carbon [2]. Humus in soils is widely accepted for improving soil health and increasing plant growth. To obtain humus with all the desired properties for stimulating plant growth, many processes are involved beginning with addition of plant material to soils.

A soil is not only the sandwich between the earth crust and atmosphere but also the lowest boundary of entire earth's atmosphere, excluding the part covered with ocean, rock-outcrop and construction of roads as well as buildings, that undergoes interactions with incoming radiation including background nuclear counts as well as chemical, biological, physical and anthropogenic interferences, wherein soil science has a bridging role within the critical zone limits [3] in an open system. Besides, soil has immense potential of storing carbon under a suitable pedogenic environment. The global climate change cannot be considered in isolation. As Janseens., et al. (2003) [4] stated, the soil is one of the important sources as well as sinks of greenhouse gases (GHGs) causing global warming and climate change. It contributes about 20% to the total emission of carbon dioxide through soil respiration and root respiration, 12% of methane and 60% of anthropogenic nitrous oxide emissions [5]. It is presumed that the global warming may influence global carbon cycle besides distorting the structure and function of ecosystem. The GHGs virtually trap the outgoing IR radiation from the earth's surface and raise the temperature of the atmosphere [6-8].

The land shrinkage as a result of non-agricultural use was 20.26% of the total cropped area (7.995 Mha) in a densely populated state of India within 25 years [9]. Such shrinkage (sealing) is irreversible causing huge losses in grain production as well as ecological imbalance in a big way and there must be some suitable legal ban against such practice. Similar trend to promote urbanization across the globe is becoming a challenge to climate change. The simplest way to minimize the challenges associated with factor productivity as well as climate change is to adopt and popularize the true conservation or evergreen agriculture by keeping the land covered with vegetation and/or crop residues round the year with least or zero tillage following the basic principles in order to restore the biodiversity and pedo-ecosystem. However, the principles of organic farming should preferably be imposed through success in conservation agriculture [10].

Agricultural Management Vs Crop Production

As Mishra (2015) stated, major agricultural activities lie around natural resources viz. soil, climate, water and ecosystem, wherein all exist in an open system. More often, soil is neither evaluated nor studied for its suitability, but simply some top soil information is used that does not make true sense. As such, one must move to (a) evaluate the soil (pedon) for deciding its potential productivity/capability (b) identify the associated limitations (correctable/non-correctable) and their improvement through locally available inputs (c) fix the suitability of land use choice in a specific set (crop rotation in case of agronomical crops) and lastly (d) decide the fertility level of a soil and recommend how much particular nutrients is applied in the most preferred ways to enhance the nutrient use efficiencies and so. This is the mandatory and often called "work culture" of a soil scientist or simply "soil based prescriptions", wherein all soil related prescriptions are made available in the form of a written document covering all pedogenic, physical, chemical, biochemical, nutritional, pathologic, microbiologic and biodiversity related parameters. This covers almost all basic components desirable for a soil health card to be distributed to farmers. Management of a soil for restoration of overall soil health must not be in isolation, but it necessitates integration after due evaluation in line with above modes of prescription. In India, the practice of land evaluation and suitability identification is virtually seldom followed [11]. A soil with full prescriptions being provided within the above work culture may be transferred to the farmers, who could simply follow the said prescriptions for improvement as well as management options within the recommended package of practices for given crops or plantation [12].

Challenges and Opportunities

In India, the "*Yoga*" has become a part of life in order to restore the human health. If a person suffers from ailment, he starts running to hospitals for treatment. But, very surprisingly, people are least caring for safe food, pure water and clean air. Why so ignorance has been a question for long without satisfactory answer. So, there is need to search for missing linkage. Opportunity is a key force to drive the wheel of solution to challenges in hand. If there is sudden but violent forecast that there would be no air for two minutes on the earth next day, such simple but hard message would spread across the globe within no time in order to combat with the challenge, because everyone wants to remain alive. Agricultural sector is the one that alone leads to nourishment and survival of lives through food, water, forage, climate, biodiversity, energy and ecosystem leading to healthy livelihood as well as gross happiness.

Students may synthesize the system that makes agriculture viable in order to define an opportunity to work. Can we define indicators of healthy food qualities that could reflect quick impact on human body? We lack symptomatic criteria to be observed quickly on body as a result of consuming the substandard or adulterated or polluted foodstuff. Currently, the available reports indicate that the food materials are often genetically altered, pulses are mixed, spices are polluted, milk and ghee are impure, vegetables are toxic, tea and coffee are adulterated and remaining foodstuffs are made toxic in some way or the other. We have to design and compose some clear-cut "symptomatic yardsticks on body" that will quickly indicate the ill-effects of the foodstuff consumed. Similarly, soil and water qualities need to be well understood in line with their vital impacts on agricultural production. Soil borne diseases as well as fluorine and arsenic problems are seriously emerging. Partial factor productivity causing decline in crop yield is virtually a soil based issue, but we hardly recommend for evaluation of whole soil or pedon. The breeding programme for crop improvement seldom considers soil, water and environment-friendly yardstick as the critical tools. Entomology and pathology do work mostly in isolation without caring for soil types and underground water quality. The earth surface is receiving almost 95% of incoming solar radiation, but we are not much aware of their role in agriculture except for bringing change in thermal regime and so. Photopedogenesis as a new chapter in soil science [13-15] is a beginning to understand such radiation related interaction issues. Flood with excess water beyond the capacity of a river is virtually a natural resource particularly for agricultural production and calls for a proven management strategy through integrated input set-up and tools [1]. These are some of issues that may form the opportunities in shaping the agricultural education and research.

Thus, each chapter in teaching process must include a well defined opportunity that can empower the students to be enthusiastic in learning process. Micro-teaching may help to provide such positive feedback in defining an opportunity of relevance based on prescribed course. But, all such perceptions suffer rudely from unplanned policies mostly structured in isolation. Agriculture in some countries like India is not treated as technical education, though research and technology development is mandatory in different sectors of agriculture. There are good numbers of agriculture based development schemes launched by the Government. The road map of agriculture in some states often suffers from technical weaknesses. The agriculture graduates in India are by and large over frustrated about employment insecurity, very low salary structures, poor social recognition and very low coverage in media. The cumulative effect of such imbalanced policies results into very poor attraction towards this profession and as such, opportunities in agricultural education is at chronic risk and deserves quick attention. For healthy and sustainable agricultural growth in India, agriculture education must be given well proven priority accepting its standard as a complete technology. These are some of bottlenecks on way to create opportunities in agriculture through teaching and learning.

Towards industrial agriculture

A medical student normally gets satisfied of running his medical practice just after successful completion of his medical degree. Similarly the agricultural graduates should be well equipped with a strong mindset to get them ready for self employment after completion of their degree. This is a way towards revolutionary transformation in student's mindset for professional satisfaction, where they will feel crazy to accept this profession in agriculture through learning and training. However, such simple proposal needs to have a strong support of government commitment. The agriculture higher education and research will thus begin to move in quantized spirit in order to achieve the mission. A Krishi Vigyan Kendra (KVK) should have a common goal to work as a NUCLEUS for reception, adoption and transfer of technologies [16]. The KVK is a critical zone full of accumulated knowledge hub through surrounding environment.

The nucleus concept of KVK relates to a compact environment comprising of teaching, research, extension, training, marketing and entrepreneurial skills in three tier linkage viz. student-teacher-farmer. The student with entrepreneurial mindset may add value to his business at every level making his creativity expanded towards competitiveness, which may enable his profession/business running faster. A student through education and research after obtaining a degree may look for his future in some of the following fields of agri-business or entrepreneurship skills too:

1. Soil evaluation for fixing the potential soil productivity.
2. Soil suitability for land use choice for the most remunerative return.
3. Soil laboratory for preparing soil health card and water quality.
4. Soil as direct food, medicine, kaoline, bentonite, attapulgite.
5. Soil as raw materials for crockery, brick making etc.
6. Tissue culture & Soil Biotechnology.
7. Breeding in crops, vegetables, spices and fruits.
8. Plant Patho-lab for plant protection measure chart.
9. Food processing and packaging.
10. Preservation of fruits and vegetables.
11. Seed processing, storing and preservation.
12. Growing and marketing of vegetable, fruit and flower seedlings/nurseries.
13. Recycling of crop residues, solid and liquid waste materials, vermicompost.
14. Conservation agriculture vs evergreen agriculture .
15. Organic farming vs integrated farming system.
16. Different systems in value addition in agriculture .

Besides, application of electricity, magnetism, monochromatic light and sound can stimulate the growth of plants. However, specific technologies are yet to discover not only to improve the yield and quality, but also to protect crop from disease, insect pest and frost and reduce the requirements for fertilizers and pesticides. Such "Electro-culture" needs to be encouraged in a big way. Besides, human population today is suffering from collapsible situation caused by adulteration, toxicity; pollution and quality deterioration of not only the foodstuff, but both water and air even. The protective medical treatments start with soil and end with grain, flesh and milk. The entrepreneurial skills must be cohesive to similar vision, mission and goal. Table 1 is merely an example to begin how to advance our skill towards agri-business following the expected challenges/opportunities.

Challenges/opportunities	Solution/Agri-business
Pulses are mixed/adulterated	To maintain the purity of variety
Oils are impure/adulterated	To maintain quality/purity
Rice and wheat are toxic with arsenic	To get/grow toxic free crop grains
Scented rice becoming abandan	To establish the scented strain
Spices are almost duplicate/adulterated	To restore the purity
Milk and milk products are adulterated	To maintain quality/purity
Small millets are disappearing	To restore and promote their production
Road map of agriculture	To begin with soil evaluation/land use suitability
Low price vegetables/fruits	To add values by processing/preservation
Mushroom/honey bee	To maintain quality
Medicinal plants/soil	To standardize for medicinal values

Table 1: *Proposed solution to overcome challenges through agri-business.*

Distinguishing traits	Agriculture	Medical science	Engineering
Origin/genesis	Close to nature	Synthetic and artificial	Artificial
Importance and use	Nourishment and survival of life	Maintenance and repairing for life	Comfort/luxury and energy support to life
In case of failure	Existence of life ends	Sick person at risk or die	Life style may be hard and uncomfortable
Alternative	It cannot be substituted	Medicinal plants and even soil in some cases	Indigenous and traditional means
Education	Student-teacher-farmer	Student-teacher-patient	Student-teacher-industry
Academic goal	Farming as self business-entrepreneur-employment	Medical practice-private clinic-employment	Corporate sector, self industry-employment
Bottleneck in profession	Lack of confidence in farming practice and entrepreneurship	Almost nil due to professional satisfaction	Only in some cases due to shortage of placement
Promoting professional confidence by teaching-learning-research	Special measure by government/university/institutions to attain 100% professional satisfaction	Almost in full satisfaction	Continuous promotion
Choice/option of student for admission	Virtually no option/choice for admission in agriculture and accepts as last option	First option for students of Biology group	First option for Math. group
Road map of agriculture	Parametric/quantitative soil based strategic planning being foundation in agricultural revolution	Integration with soil, clay and medicinal plants	Mechanization and processing tools
What needs to be done to make agriculture more profitable ?	Reliable and well proven approach towards productivity, profitability and sustainability in agriculture through education	Linking medical to food, water, soil, clay, medicinal and aromatic plants	Linking engineering to agricultural mechanization and processing options

Table 2: *Comparative visibility of agriculture with medical science and engineering.*

Logical perception on comparative linkage of agriculture with medical science and engineering under relevant distinguishing traits (Table 2) clearly discover the most vital issues that need to be addressed at policy level, if nation wants to promote a profitable agriculture. Agriculture as a profession is least respected and the farmers are known as resource poor persons in the community. As such, agriculture must be awarded all eternal respect as the most viable profession. Each parcel of land is a prime land in terms of its suitability to specific land use. A land with sandy texture is suitable for some *saccharum* species (*kans*), cucurbits and even sweet potato. Soil as a natural resource cannot be a waste and subject to management according to its capability to produce.

Poverty Alleviation: A Key Issue

As Mishra (2014) stated, only two major successions could be broadly recognized viz. (i) Agriculture through hunting and (ii) Agriculture through ploughing, sowing or planting and harvesting. In the second succession, there have been numerous reforms including reforms during green revolution, mostly technological reforms. Such reforms have definitely solved the food security issues in a big way. But, farmers are by and large poor in terms of livelihood and economic growth. This is of global concern even. However, it is of strong logical understanding to expand the long existing second agricultural succession to its third counterpart (succession), wherein farming (ploughing and harvesting) is made closely tagged with "processing, value addition and marketing at the farmer's door" itself without allowing any role of a middleman. If we accomplish the attainment of the emerging agricultural succession in reality, it will be proved a breakthrough towards alleviation of poverty among farming communities. However, the strategic planning may be developed as below:

a. To enrich the infra-structures as the assumptions for the success towards adoption of the respective management as well as technical training at farmer's doors viz. Secured land ownership, road, water, electricity, banks, self-help groups, internet access/ training, transport and market access including location specific processing and other post harvest and value addition plants to be installed.
b. To appreciate KVKs for designating some nucleus villages (based on approved standard) for adoption of reliable and proven technologies being approved with assured outcome (produce).
c. To organize frequent trainings on setting-up of agri-based industries as well as food processing and value addition plants for site-specific agri-based products.
d. To set up a market complex for assuring the normal sale procedure for different agricultural products in a way to fetch high price to the farmer without involvement of middlemen.
e. To involve corporate sectors in rural area and get the farmers tagged to begin with new succession of sustainable agricultural production to sustain livelihood and economic growth.

The proposed set rules as above may help to develop a framework of agri-business management in a way to assure farmers with maximum profit. Specialized people may sit together to formulate a strategic plan to shift whole traditional farming system into corporate sector, wherein farmers will be the main actors. That will be the true outcome of the third agricultural succession. As a consequence, farmers will no more remain then poor, if global food security campaign is designed and approved in line with above basic set rules. Accordingly, the farmers will keep adhered to the following responsibilities:

a. Let a farmer sow or plant the seed or seedling following the recommended technology and available inputs (preferably locally).
b. Let him harvest the product under his own control following the improved technology (already existing in most parts).
c. Farmer must have liberty to store his produce or go for post harvest technology/processing or even value addition to fetch a good price. Let farmers be sole responsible in planning and decision process of marketabe produce.
d. Farmers must be exposed for opportunities in marketing (import/export) and that too under their direct control.

The above four points programme at farmer's door (direct control) forms the tool for poverty alleviation and needs encouragement by the policy makers, government, agricultural universities, cooperative bodies and extension workers. Every farmer with land ownership should furnish all four steps at his door. Other professions like dairy, goatry, mushroom production, apiary etc are additional to boost up the economics for both land owners and landless [16]. Once the programme is legalised through adoption in a village, the farmers will get excited towards its follow-up and adoption in true sense. Let a village come out with a success story for others.

Corporatization of Indian Agriculture

If the land productivity is improved, the crop yield is remarkably increased and the cost of cultivation would get reduced. There is need to enlist the best possible ideas in agriculture for business that may help the farmers and benefit entrepreneurs. The students, researchers and entrepreneurs should come forward with need based business models that must address the issues being handled or faced by farmers in a given area. The agricultural sector cannot be singularly managed in isolation by any single entity like private or public in order to curb the monopolistic tendencies. There must also be a competitive environment and government must take a positive lead through intervention. By and large, the per unit area productivity in Indian agriculture is fairly lower than many crop producing countries besides increasing trend of inequality of land ownership over the years in India and also the plight of farm labour in other sectors or industries. Is it not the herculean task to the government? The M S Swaminathan report under the National Commission on Farmers, constituted on 18th November 2004, emphasized on improvement of productivity, profitability and sustainability in the major farming systems as detailed at http://agricoop.nic.in/imagedefa. There is thus need to develop a "*National Land Use Planning Commission*" to promote all possible critical issues to formulate some working principles to corporatize the agri-ecological zone specific agriculture in India with a common vision to what needs to be resolved to make the agriculture profitable to Indian farmers?

As a first hand approach, the corporatization in agriculture may consider the issues as under:

1. Restructuring of agricultural education through learning by seeing.
2. Auditing of agricultural research based on researchable problems following the logframe matrix and work plan.
3. Transfer of research findings/recommendations through Krishi Vigyan Kendra.
4. Soil productivity evaluation, land use choice identification followed by crop rotation and crop specific fertility recommendations for balanced nutrition (Mishra 2014, 2015a).
5. Assure productivity, profitability, sustainability and marketing well before planning execution.
6. Insure harnessing of renewable energy sources viz. wind, biogas and solar energy as well as conventional energy sources.
7. Promote private investments in agriculture support systems like irrigation, seeds, fertilizers, infrastructure etc.
8. Identify and plan for additional side business like livestock, fishery, bee keeping, poultry etc. to escape suicidal incidence.
9. Assure quality measures for manure, fertilizers, bio-fertilizers, plant protection measures as well as animal feed, pasture, vaccine, drug, and animal products.
10. Insure transport, networking, safety against black marketing and attraction for corporate sectors.

With the above assumptions, a generalized module is proposed how to link farmers with the corporate for agri-business in the agricultural profession as follow:

a. Farmer will be the sole land owner and so the agreement is executed accordingly. The allotted area of land is empanelled by the corporate representative for a fixed period of time in bond.
b. Decision on land use or crops with specific management inputs is taken by corporate person.
c. All necessities as mentioned above under assumption will be managed by the corporate person except security and labour for package of practice; for which farmers will get compensation almost in each month.
d. Agri-business person is sole owner of the produce for marketing, since he must have better distribution net work.
e. Farmer is empowered to cancel the agreement, if the same is not followed or obeyed in line with bond.
f. On completion of agreed period, the farmer may renew the agreement or move to other one for further contract [17].

Conclusion

Duplication and fraudulent in agricultural research are often spoken, because related education in agriculture suffers from missing linkage in comprehensive knowledge. Agriculture is the most powerful profession that assures the existence of life by providing safe food, pure water and clean air even. But, poverty alleviation among farmers is the first and foremost task to accomplish. "Make in India" has a strong message not only for India but equally for the globe in all sphere of development including agriculture in particular. Indian vision to promote profitable agriculture under sustainable development approaches would lead to poverty alleviation and this necessitates corporatization in agriculture. This further necessitates the establishment of the "*National Land Use Planning Commission*" to keep the overall executive control across the country on issues, priorities, set rules and modules for corporatization of agriculture.

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