

Global Agriculture: Vision and Approaches

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Abstract

The perceived limits to producing food for a growing global population have been a source of debate and preoccupations for ages. Experts and the public alike seem to alternate between pessimism and optimism, anxiety and complacency, about the world food situation and outlook. Agriculture in the 21st century has multiple challenges. Globally, Agriculture it seems is back on the development agenda to meeting the Millennium Development Goals. The main objective of the paper is to analyse and trace insights of past and present of global agriculture and frame new vision of it. The status of global agriculture in general and continents and country-wise policies in particular from 61 countries of 6 continents were collected and insights are analyzed. These continent-wide policies can safeguard each country's independence. New Vision for Agriculture calls for a new approach. The new approach of global leaders has aligned around the New Vision for Agriculture. Development of a "Road map for Achievement of the Vision is providing a framework for action and collaboration for global leaders. These includes exchanging ideas, collaborating with international scientists and agricultural institutions is part of the solution. The study found that agriculture must be global agenda in future and all countries should fix minimum support price policy must be world prices with 20% extra. The "double by 2050" analysis from the United Nations Food and Agriculture Organization revealed that food production in the developing countries would need to almost double. The study found that developing countries have witnessed higher demands (2025) for wheat, maize, soybean, pig meat, poultry meat, sheep meat, beef and veal, whereas developed countries have witnessed higher demands for sugar. The globe has to develop a new strategy and global policies to meet the requirements of the rice. The future task of CGIAR&FAO must act as intelligent think tank on acquaint, analyse global research knowledge on future technologies, inventions, income models, latitude based science, space technologies, farm computer, Global Agricultural Growth and Policy coordination, climate financing, genetically modified crops on Mars, understanding too many variable effects on

agriculture, digital agriculture, industrial farming, International Agricultural Education and transfer to capacity building of NARES System.

Keywords: Continents, Global Agriculture, New Vision, Policies

Introduction

The perceived limits to producing food for a growing global population have been a source of debate and preoccupations for ages. Already in the third century AD, Tertullian, a church leader, raised the issue (Alexandratos, 1997). The debate gathered momentum in the late eighteenth century, following Malthus, and more recently with Paul Ehrlich's Population Bomb. Alexandratos and Bruinsma (2012) reported that world food production grew faster than population. Agriculture in the 21st century has multiple challenges. It has to produce more food and fiber to feed a growing population with a smaller rural labor force, more feed stocks for a potentially huge bioenergy market, contribute to overall development in the many agriculture dependent developing countries adopt more efficient and sustainable production methods and adept to climate change (FAO, 2012). In the face of climate change, global political and food insecurity, volatility of global market prices and the resurgence of health crises, only an ambitious, continent-wide policy can safeguard each country's independence. Experts and the public alike seem to alternate between pessimism and optimism, anxiety and complacency, about the world food situation and outlook. For the past few decades, the rate of growth in world food production in both developed and developing countries has exceeded the population growth rate. During the 1970s and 1980s the food situation improved tremendously (Mrityunjay and Singh, 2008). But by the 1980s and 1990s the increasing scarcity of land and water resources, environmental degradation, and loss of biodiversity had begun to limit the expansion of food production in both developed and developing countries (Dastagiri, 1998).

World Watch Institute (2004) reports that increases in food production, per hectare of land, have not kept pace with increases in population, and the planet has virtually no more arable land or fresh water to spare. FAO (2011) emphasis agricultural investment is essential to promoting agricultural growth, reducing poverty and hunger, and promoting environmental sustainability. Reports on global food security in 2011 by the IFPRI (2011) and other reports of the FAO (2012), the World Bank (2011), and the International Fund for Agricultural Development (2011) all highlighted the need for governments to ensure responsible investment in agriculture.

Global food security – or, in more traditional terminology, world hunger – remains a serious concern (Valentin, 2011). However, even at the global level,

current food supplies are sufficient to nourish the world population (Valentin, 2011). Food insecurity, therefore, results from uneven distribution. In the coming decades, calorific production is projected to further outpace population growth (Valentin, 2011). Global food crises are turning out to be far too frequent to be dismissed any longer as a freakish phenomenon. A spike in the prices of agricultural commodities is again looming, threatening a repetition of the 2007-2008 global food crisis when international prices skyrocketed to their highest in 30 years (Caliber, 2012).

The International Monetary Fund (IMF)'s food price index rose by over 80 per cent between the start of 2007 and mid-2008 (Subramaniam, 2012). Severe drought in the United States, flooding in several parts of Europe, a massive shortfall of rain in Africa and India are feared to lead to huge loss of output and a scramble for markets and supplies (Subramaniam, 2012). As in many other parts of the world, soaring food prices during the period 2007/08 had major impacts on the countries of Southeast Asia.

Globally, agriculture seems is back on the development agenda, seen as a key to spurring growth and reducing poverty, and as a key route to meeting the Millennium Development Goals. The U.S. Global Research Program, which is a consortium of 13 federal agencies, published a report in December 2015 that said climate change is very likely to affect global, regional, and local food security by disrupting food availability, decreasing access to food, and making utilization more difficult (Kimberly, 2016). In the face of climate change, global political and food insecurity, volatility of global market prices and the resurgence of health crises, only an ambitious, continent –wide policy can safeguard each country's independence. The main focus of the paper is to analyze global agricultural policies and visualize global agriculture and frame new vision for the growth and development of global agriculture. The main objectives of the paper are:

1. To analyze and trace insights of past and present global agriculture.
2. To visualize global future agriculture.
3. To frame research vision, approaches and suggest polices for global agriculture

2. Data and Methodology:

The study is basically based on meta-analysis of global agricultural policies & vision frame work. The status of global agriculture policies in general and continents & country-wise in particular from 61 major countries of 6 continents policies and insights were analyzed. The continents viz., Europium union (29 countries), North America (3 countries viz., USA, Mexico and Canada), Asia (13 countries including china), South America (8 countries), Africa (7 countries), and Australia were purposefully selected to analyze, trace insights of past and present agricultural policies.

The data and information on global agricultural policies collected from UNO, FAO, IFPRI, World Bank, WEF, OECD, CGIAR reports and other secondary and published secondary sources and websites. The secondary data related to demand (consumption) and supply (production) of major agricultural crops viz, rice, wheat, maize soybean, pig meat, poultry meat, sheep meat, beef and veal meat were collected from OECD-FAO Agricultural Outlook 2016-2025 and growth rates were estimated. Continent-wide policy can safeguard each country's independence. The continent wise policies are critically appraised and compared with one another and best policies are arrived. Global vision on agriculture projected by UNO, FAO and CGIAR collected and framed research vision and new approach. Finally, suggestions are made to integrate global agricultural policies for the future. The study used Delphi survey method to validate the results obtained through secondary data (Dalkey and Helmer, 1963). It also suggests the best future global agricultural policies.

3. Results and Discussion

The UN global key variables beyond 2050 which influence on food security are presented in Table 1. The UN population projections—from the medium variant of the 2008 indicate that the world total could reach 9.15 billion in 2050. Thus, we expect an increase of 2.25 billion over the next 40 years, which is lower than the 3.2 billion increased that materialized between 1970 and 2010. This deceleration will impact world agriculture by lowering its rate of growth compared to the past According to the Medium Variant projection world population is expected to peak around the year 2075 at 9.4 billion and then start declining slowly to 9.2 billion by 2100.

Demand for cereals, for both food and animal feed uses are projected to reach some 3 billion tonnes by 2050, up from today's nearly 2.1 billion tonnes. The advent of biofuels has the potential to change some of the projected trends and cause world demand to be higher, depending mainly on energy prices and government policies. The projections show that feeding a world population of 9.1 billion people in 2050 would require raising overall food production by some 70 percent between 2005/07 and 2050. Production in the developing countries would need to almost double. This implies significant increases in the production of several key commodities. Annual cereal production, for instance, would have to grow by almost one billion tonnes, meat production by over 200 million tonnes to total of 470 million tonnes in 2050, 72 percent of which in the developing countries, up from the 58 percent today. It shows that for the world as a whole the pressures on agriculture to produce more food for the growing population will much decrease beyond 2050 indicated in projections for the period to 2050. The results show that global agricultural production would need to grow at 0.4

per cent per year from 2050 to 2080, i.e. less than half the growth rate projected for the period 2005/2007-2050.

Table 1. Global key variables beyond 2050 which influence on food security

Key Variables	2005	2050	2080	2100
Population (million)- UN 2008 revision	6592	9150	9414	9202
Population (million)- UN 2010 revision	6584	9306	9969	10125
Cereals, food (kg/capita)	158	160	161	
Meat, food (kg/capita)	38.7	49.4	55.4	
Oil crops (oil. equiv.), Food (kg/cap)	12.1	16.2	16.9	
Cereals, production (million tonnes)	2068	3009	3182	
Meat, production (million tonnes)	258	455	524	

Source: Alexandratos and Bruinsma (2012).

OECD & FAO projections:

The demand (consumption) and supply (production) of major agricultural crops were presented in Table 2. The results show that demand for rice in 2025 will be marginally more compared to the supply of rice in the world, whereas demand for wheat, maize and soybean would be moderately higher in developing countries compared to supply. In case of sugar, developed and OECD countries are witnessed moderately highest demands than supply of sugar, while other countries witnessed reverse trend. The results reveal that growth rate of demands is found to be marginally higher for wheat (1.27 %) and sugar (2.49 %) compared to supply growth rate in developing countries, whereas in other crops and in other countries has witnessed reverse trend.

The demand (consumption) and supply (production) of meats for 2025 were presented in Table 3. It shows that demands for pig meat, poultry meat, sheep meat, beef and veal were found to be marginally higher in developing countries compared to supply, whereas in developed and OECD countries reverse trend was observed. The result reveals that growth rate of demands found to be marginally higher for pig meat, poultry meat, beef and veal compared to supply growth rate in developing countries, whereas in other crops and other countries has witnessed reverse trend in growth rate.

The results found that developing countries have to concentrate and follow strategic action to meet the future demands (2025) of the wheat, maize, soybean, pig meat, poultry meat, sheep meat, beef and veal, whereas developed countries have to concentrate more to meet the future sugar demands. The globe has to develop a new strategy and global policies to meet the future requirements of the rice. The livestock sector could play an important role in the process of economic development of world and can

significantly contribute to economic growth, poverty reduction and the attainment of the Sustainable Development Goals. Despite the potential contribution of livestock to poverty reduction, the sector seems to be largely neglected by policy makers (FAO, 2008).

Table 2: Demand and Supply Projections of Major Agriculture crops (2018-2025) (mt)

Crops	2018		2025		Growth rate of Projected (%)	
	P	C	P	C	P	C
RICE						
World	517.7	519	562.6	563.2	1.20	1.17
Developed countries	18.4	18.9	19.1	19.4	0.53	0.37
Developing countries	499.3	500.1	543.5	543.8	1.22	1.20
OECD	21.7	22.8	22.1	22.8	0.26	0.00
WHEAT						
World	739.8	740.4	791.3	789.6	0.97	0.92
Developed countries	383.2	273.4	403.3	279.5	0.73	0.32
Developing countries	356.5	467	388	510.1	1.22	1.27
OECD	293.6	225.4	306.6	229.8	0.62	0.28
MAIZE						
World	1048.5	1060.1	1146	1143.4	1.28	1.09
Developed countries	507.9	474.2	541.5	492.2	0.92	0.53
Developing countries	540.5	585.9	604.5	651.2	1.61	1.52
OECD (2)	475.6	491.8	504.8	509.2	0.85	0.50
SOYBEAN						
World	334.72	334.92	393.89	393.87	2.35	2.34
Developed countries	125.97	88.67	135.87	93.41	1.09	0.75
Developing countries	208.76	246.25	258.02	300.46	3.07	2.88
OECD (2)	117.49	88.88	125.13	93.86	0.90	0.78
SUGAR						
World	181.93	178.16	210.03	204.74	2.07	2.01
Developed countries	41.94	46.74	43.95	48.58	0.67	0.55
Developing countries	140	131.42	166.09	156.16	2.47	2.49
OECD (2)	40.56	43.24	42.26	44.92	0.59	0.55

Note: P-Production, C-Consumption, Accessed on 3rd June, 2017. Mt- Metric tonnes,
Source: OECD-FAO Agricultural Outlook 2016”,

Table 3: Demand and Supply Projections of Meats (2018-2025)

Country	Unit	2018		2025		Growth rate of Projected (%)	
		P	C	P	C	P	C
World							
Beef And Veal	Mt cwe	70.89	70.60	77.77	77.46	1.33	1.33
Pig meat	Mt cwe	121.53	121.34	131.00	130.8	1.08	1.08
Poultry Meat	Mt rtc	119.32	119.32	131.26	131.26	1.37	1.37
Sheep Meat	Mt cwe	15.08	15.11	17.44	17.43	2.10	2.06

Developed countries							
Beef And Veal	Mt cwe	29.78	29.14	31.25	30.50	0.69	0.65
Pig meat	Mt cwe	44.73	41.38	46.08	42.18	0.43	0.27
Poultry Meat	Mt rtc	49.34	46.58	52.58	49.38	0.91	0.84
Sheep Meat	Mt cwe	3.32	2.67	3.61	2.78	1.20	0.58
Developing countries							
Beef And Veal	Mt cwe	41.11	41.46	46.52	46.96	1.78	1.80
Pig meat	Mt cwe	76.80	79.96	84.92	88.62	1.45	1.48
Poultry Meat	Mt rtc	69.98	72.74	78.68	81.87	1.69	1.70
Sheep Meat	Mt cwe	11.75	12.44	13.83	14.65	2.36	2.36
OECD countries							
Beef And Veal	Mt cwe	28.01	26.93	29.21	28.03	0.60	0.57
Pig meat	Mt cwe	42.39	39.64	43.63	40.53	0.41	0.32
Poultry Meat	Mt rtc	47.66	44.67	51.00	47.31	0.97	0.82
Sheep Meat	Mt cwe	2.65	2.00	2.87	2.06	1.15	0.42

Note: P-Production, C-Consumption,

Note: Mt cwe - Metric tonnes at carcass weight equivalent, Mt rtc - Metric tonnes at Ready to cook

Source: OECD/FAO (2016), "OECD-FAO Agricultural Outlook", OECD Agriculture statistics (database)

Based on these projections, UN and FAO made vision on Agriculture.

UN Vision: Global agriculture needs a 'profound transformation' to fight climate change and protect food security (Harvey, 2016). The New Vision for Agriculture (NVA) calls for a new approach to agriculture that will deliver food security, environmental sustainability and economic opportunity (WEF, 2010).

FAO Vision: "Hunger, poverty and climate change need to be tackled together" (FAO, 2016).

CGIAR (Consultative Group on International Agricultural Research) & **FAO Vision** must be as a global knowledge institutions enabling National Agricultural Research and Education System (NARES) adapt to change through continuous innovations.

Keeping in view Nation and Global objectives & goals, the researchers and institutions have to plan & acquaint knowledge on global level and apply local level. The researchers has to acquaint global knowledge on innovations, cutting edge technologies, Global eBusiness and policies and taught NARES of different countries scientists and improve their capabilities.

Global agriculture needs a 'profound transformation' to fight climate change and protect food security. "Hunger, poverty and climate change need

to be tackled together. These includes exchanging ideas, collaborating with international scientists and agricultural institutions is part of the solution. The “double by 2050” analysis was based cited food-demand projections from the United Nations Food and Agriculture Organization

Global food systems are increasingly at risk. Rising demand, scarce resources and increased volatility are placing new pressures on an already-stressed agriculture sector. Over 870 million people, many of them small farmers, remain chronically hungry and undernourished (WEF, 2013). In response to this challenge, the New Vision for Agriculture calls for a new approach to agriculture that will deliver food security, environmental sustainability and economic opportunity (WEF, 2010). Achieving this vision requires a comprehensive approach to transforming whole value chains and systems, harnessing the power of market- based solutions, and engaging local and global stakeholders in an unprecedented joint effort (Desmarais and Handy, 2014).

A New Approach:

Global leaders have aligned around the New Vision for Agriculture (NVA). Regional and national leaders have adopted the vision as their own, catalysing action-oriented partnerships in Asia, Africa and Latin America. These activities have engaged over 250 organizations and activated commitment, collaboration and innovation among a broad network of over 800 leaders. Complementing and accelerating these activities has been support from global platforms including the G8 and the G20.

Partnerships catalysed by the NVA include:

Global Partnerships Catalysed by the New Vision for Agriculture shown in Table 4. National-level partnerships in Vietnam, Indonesia and Mexico, and a state-level partnership in Maharashtra, India, a regional partnership in Grow Africa (jointly convened with the African Union, NEPAD and WEF), which has mobilized investment commitments and supported partnerships in alignment with the national plans of seven countries in Sub-Saharan Africa: Burkina Faso, Ethiopia, Ghana, Kenya, Mozambique, Rwanda and Tanzania anchored around government plans, the partnerships on Taking Stock of New Models at the global, regional, and country levels, the New Vision for Agriculture journey is composed of 3 stages:

1. Achieving alignment around a concept and vision for partnership
2. Proving new concepts by demonstrating success on a small scale through partnership-based action, starting with pilot projects
3. Embedding the partnership approach and scaling it through institutions and national programs

Development of a “Road map for Achievement of the Vision, providing a framework for action and collaboration for global leaders.

Table 4 Partnerships Catalysed by the New Vision for Agriculture

Levels	Partnership Catalyst	Agency
National level	Indonesia, Vietnam and Mexico	PIS Agro in Indonesia, Public Private Task Force on Sustainable Agricultural Growth in Vietnam, Mexican Agribusiness Partnership for Sustainable Growth (ALMA) in Mexico
State level	Maharashtra, India	Maharashtra State Public-Private Partnership, Government of Maharashtra, India
Regional level	Grow Africa (Sub-Saharan Africa 7 countries viz., Burkina Faso, Ethiopia, Ghana, Kenya, Mozambique, Rwanda and Tanzania)	Jointly convened with the African Union, NEPAD and World Economic Forum

Source: World Economic Forum, 2013,

Note: NEPAD-New Partnership for Africa’s Development

Global Models Transformation in Agriculture

Continent wise policies such as Europe, North America-US, Mexico, Canada, Asia, Latin America, Africa, Australia, World Government Polices. The continental wise policies are mentioned in Table 5. The results conclude that,

1. The basic changes in Europe models transformation from supply driven models of traditional agriculture to demand-driven market oriented agriculture.
2. The North American Model changes to income supports, countercyclical program. decouple key support programs from production decisions and market oriented agriculture
3. Australian model is market oriented agriculture (Low import duties), Targeted payments and Farm Household Allowance Program.
4. The Latin America new twist to the Green Revolution model, with genetically modified (GM) crops and run by transnational corporations
5. In Africa, agriculture runs by the significance of aid provided donors. (USAID, World Bank, Gate Foundation)
6. The successful Asian State Green revolution model focuses more on seed and technologies to increase production.
7. Bill & Melinda Gates Foundation refreshed its agriculture strategy with a strong focus on agricultural development in Sub- Saharan Africa and South Asia.
8. The Global vision suggests to focus future policies on agriculture as a global agenda and global efforts.

Global Price Policy

Policy measures taken by governments to reduce the impact of higher food prices along with number of other countries, the seven emerging economies made various policy interventions in response to higher food prices. These different measures in terms of their orientation: whether policies are directly orientated to affect consumers, producers or trade. The most common policy response taken by the emerging economies – and also worldwide – has been to reduce import tariffs on food products. The next most common response has been to impose export barriers. The measures imposed by India, Russia and Ukraine were particularly significant given the potential quantities involved. Another common response was to release government held stocks, particularly of grains, on to the domestic market to ensure supply and reduce upward price pressure. Another response has been to stimulate domestic production by raising minimum prices and expanding input subsidies. Retail price controls have been introduced in China, Russia and Ukraine. China and South Africa made changes to their biofuel policies to reduce pressure on food security. Chile and South Africa provided additional direct transfers to those most vulnerable to the effect of higher food prices: a cash-based transfer in Chile and the provision of food in South Africa.

International Policies & Factors Effecting Price & Income Volatility of Farmers.

The reasons for price & income volatility of farmers viz., Demand & Supply, Political & Legislative, Exchange rate, Energy, Fertilizer Prices, Interest Rates, WTO, Weather & Disasters, Production technologies, Future markets, Insurance. Public Policies Promotion & Safety nets.

Table 5. Continent wise Agricultural policies transformed global agriculture

Sl. No	Continent/ Country	Policies and Remarks
1.	European Union (29 countries)	The European Union under taken many measure or policies for the development of agricultural sector. It has adopted the common agricultural policy for the entire union. It offering direct payment after WTO, direct subsidies, Domestic (Buying), Broder (Exports Subsidies and Import Duties), price dismantling and many market support measures.
2	The North American Continent United States of America Mexico	Farm Bill, 1995 Direct Payment 2002, 2008 Counter cyclic payments Fixed direct payments 1990-2013 Price loss coverage Crop Insurance Program Farm Bill account 489 Billion \$ in 2014-18 budget Focus on Market Income Zero interest rates to farmers

	Canada	USA Elections Majority depends on Farmers votes (1.4%).
3	Australia	Market Oriented Agriculture (Low import duties) Targeted payments Disaster Assistance Tax Concessions Farm Household Allowance Program
4.	Asia	13 Asian countries the successful Asian State Green revolution model focuses more on seed and technologies to increase production. And increase market access.
5.	Africa and Sub Saharan 7 countries	In Africa, agriculture was runs by the significance of aid provided by donors. DFID. USAID, World Bank, OECD, Bill Gate Foundations etc.
6.	South America (8 countries viz., Brazil, Argentina Bolivia, Colombia, Chile, Ecuador Mexico, Uruguay)	Removed agricultural taxing resulted productivity increased two times in crops, and three times in livestock's. Separate Ministries MAPA- Commercial Agriculture, MDA-Small Scale Farmers Rural Credit and MSN Price Guarantee Agricultural Insurance & Subsidies Subsidized Credit
7	World Government Policy	The most common policy response taken by the emerging economies and also worldwide has been to reduce or suspend import tariffs on food products.
8.	China	China is the largest producer, consumer, exporter as well as importer of most of the agricultural commodities in the world. It adopted policies like Market intervention; Tariffs, Tariff rate quotas; and direct payments to help the farmers. It provides 20 % of higher minimum support price (MSP) to crops than compared to the average world support price. Tariffs, Tariff rate quotas Farmers
9	Global Livestock policy	The European union established a body of law and policies Viz., Animal Health Law in 2016, New Slaughter Regulation in 2013 etc. In Africa and sub-Saharan Africa countries livestock policies are viz., Livestock Policy of Tanzania (1983), National Livestock Development Policy of Kenya (1980), Meat Commission in Kenya, livestock development policy in Ethiopia (1992) etc. In china, livestock policies are Feed policy in 1999, Consumption rationing policy 2000, Subsidies to large producers, privatization of livestock sector etc. In India, livestock polices are National Livestock Policy (2013), Animal Welfare Act, 2011 Prevention of Cruelty to Animals (Regulation of Livestock Markets) Rules, 2017, etc. In USA, Mandatory Price Reporting (MPR) program in April 2001, The Farm Security and Rural Investment Act of 2002, Farm Act 2008, The Agricultural Act of 2014 (2014 Farm Bill) etc.

Future Task: Global knowledge pass on to NARES institutions. CGIAR&FAO acquaint, analyse global research knowledge on future technologies, inventions, income models. Latitude based science, space technologies, Farm computer, Global Agricultural Growth and Policy coordination, Climate financing, GM crops on Mars, understanding too many

variable effects on agriculture, Industrial Farming, International Agricultural Education and transfer to capacity building of NARES System. Digital agriculture, Scientific discoveries, Big data boom. It is Research Intelligence think tank.

Conclusion

Global agriculture needs a ‘profound transformation’ to fight climate change and protect food security, hunger, poverty. In response to this challenge, the New Vision for Agriculture calls for a new approach. The new approach is global leaders have aligned around the New Vision for Agriculture. Regional and national leaders have adopted the vision as their own, catalysing action-oriented partnerships in Asia, Africa and Latin America.

The “double by 2050” analysis from the UNFAO revealed that food production in the developing countries would need to almost double. The results found that developing countries have to concentrate and follow strategic action to meet the future demands (2025) of the wheat, maize, soybean, pig meat, poultry meat, sheep meat, beef and veal, whereas developed countries have to concentrate more to meet the future sugar demands. The globe has to develop a new strategy and global policies to meet the future requirements of the rice. The livestock sector could play an important role in the process of economic development of world.

Partnerships catalyzed by the NVA include: National-level partnerships in Vietnam, Indonesia and Mexico, and a state-level partnership in Maharashtra, India, a regional partnership in Grow Africa. Anchored around government plans, the partnerships on Taking Stock of New Models at the global, regional, and country levels. The New Vision for Agriculture journey is composed of achieving alignment around a concept and vision for partnership and embedding the partnership approach and scaling it through institutions and national programs. Development of a “Road map for Achievement of the Vision, providing a framework for action and collaboration for global leaders, exchanging ideas, collaborating with international scientists and agricultural institutions is part of the solution.

The basic changes in Europe models concerning the transformation from supply driven models of traditional agriculture to the concept of modern agriculture focusing on demand-driven types of market agriculture. The North American Model; United States, Mexico, and Canada have each made significant changes to their agricultural policies over the past several years particularly in the area of income supports. The Latin America continent was confronted with a new twist to the Green Revolution model, with the introduction of genetically modified crops and run by transnational corporations. In Africa, agriculture operated by the significance of aid provided by donors. The successful Asian State Green revolution model focuses more on seed and technologies to increase production. The most

common policy response taken by the emerging economies and also worldwide has been to reduce or suspend import tariffs on food products.

The study suggest that the future task of CGIAR&FAO should act as intelligence think tank on acquaints, analyse global research knowledge on future technologies, inventions, scientific discoveries and transfer to capacity building of NARES System. The study suggests to focus future policies on agriculture as a global agenda and global efforts. All countries should fix MSP 20% Higher than world Average Price.

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