Role of New Development Bank and Food Security in the BRICS Countries

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BRICS countries are an important grouping to deal with the global food crisis, promote global economic recovery and play an important role in global initiatives on food security. The creation of the BRICS Bank, New Development Bank, by the BRICS nations (Brazil, Russia, India, China & South Africa), competes with the World Bank and IMF, is yet another example of how the international control is skittering away from those nations that are failing to adapt to a changing world. The current economic crisis could well go down in history as the turning point where the entire West failed to turn and adapt itself to the change.

[Keywords: New Development Bank, Food Security, BRICS countries]

1. Introduction

Population has always been one of the fundamental factors that influence socioeconomic development. The structure of population growth has, and will have significant impact on the socioeconomic landscape of the BRICS countries as well as the international community.

Maria Printseva writes that growing populations, the increasing role of the middle class, changes in the nature of consumption, and catastrophic depletion of natural resources that support agricultural production may bring about a significant hike in food shortages in the BRICS region (Maria Printseva, 2016).
Table-1 : Production of Cereal (million tons), 2015

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The rate of population production is more than the production of cereal in the BRICS countries. Table-1 indicates the maximum cereal production in the BRICS countries does not cater to the needs of the growing population.

The approaches that have ensured greater production and higher productivity levels for the last several decades have inflicted irreparable environmental damage; caused land degradation; polluted soil, water, and air and reduced biodiversity. As a result,

- Land per capita is shrinking - 1 to 1.5 acres, 0.3 hectares
- Farming is a terrible business - 45% want to quit farming, middle class nightmare
- Increasing cost of land - $20,000+ acre,
- 10 to 100 acres, illegal crop farming, land ceiling act

Globally, we use 50% more natural resources than the planet can generate every year. If the current model persists, we will need to double the level of natural resources currently available by as early as 2030. This means that the global community is running the risk of not only failing to reduce the proportion of the population suffering from hunger during the next development stage, but even that of getting back to where we started (Maria Printseva, 2016). India and China in the BRICS will become the net food importer in 2030. The area of cultivated land of BRICS countries has already been overused and despite the use of scientific cultivation, this land failed to produce for the population of estimated 3.0 billion. Table-2 shows the stagnancy in the production in the BRICS region.

Table-2 : Area of cultivated land (million hectares), 2015

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The Moscow meeting of 2010 and Beijing meeting in 2011 has formulated the Action Plan on Agricultural Cooperation (APAC) of the BRICS countries for the period of 2012-2016 and following points has been highlighted such as:

1. Creation of basic agricultural information exchange system of BRICS countries (coordinated by China in collaboration with other four countries).
2. Development of a general strategy for ensuring access to food for the most vulnerable population (coordinated by Brazil in collaboration with other four countries).
3. Reduction of negative impact of climate change on food security and adaptation of agriculture to climate change (coordinated by South Africa in collaboration with other four countries).
4. Enhance agricultural technology cooperation and innovation (coordinated by India in collaboration with other four countries).
5. Trade and investment promotion (coordinated by Russia in collaboration with other four countries).

New Development Bank (NDB) treaty forced in July 2015 and refers to the exchange of resources, personnel, technology and knowledge between developing countries that acknowledges World without the West. NDB strengthens the Action Plan on Agricultural Cooperation 2012-2016 and Article 19a (Methods of Operation) of the NDB agreement states, “The Bank may guarantee, participate in, make loans or support through any other financial instrument, public or private projects, including public-private partnerships, in any borrowing member country, as well as invest in the equity, underwrite the equity issue of securities, or facilitate the access of international capital markets of any business, industrial, agricultural or services enterprise with projects in the territories of borrowing member countries” (NDB Agreement, 2012-2016).

To fulfill its purpose, the Bank shall support public or private projects through loans, guarantees, equity participation and other financial instruments. It shall also cooperate with international organizations and other financial entities, and provide technical assistance for projects to be supported by the Bank.

2. Issues of Food Security in BRICS

The modern agriculture technology has been developed in the BRICS region that enable to double or triple the production as well but the common concern is that whether this technology gives a guarantee to BRICS future food security? Article 1 (Purpose and Functions) of the NDB agreement states, “The Bank shall mobilize resources for infrastructure and sustainable development projects in BRICS and other emerging economies and developing countries, complementing the existing efforts of multilateral and regional financial institutions for global growth and development” (NDB Agreement, 2012-2016).

Prof. Suresh Kumar spoke during his BBC interview to Prof Andrews, viewed that “We are moving from subsistence farming to sustainable develop-
ment. African farmers need small-small technology right from the irrigation facility, infrastructure, road building, railway, cold storage facility along with the better seeds and better fertilizers. This is the one part of the agriculture development. After that, if they get good market, it will help them in achieving sustainable development. Coming to the Africa and the world, he suggest that lets initiate with the private investors with the 70 : 30 or 60 : 40 policy in which 60 or 70 can be produced for the export and 40 or 30 percent should be used with in Africa or in the African regional market that will give the slogan Remove Poverty, or end to poverty that will be possible only with this configuration of 60:40 or 70:30. If we see the economics, within 30% Africa will be food sustainable, there will be Green Revolution and no people will die of starvation. This 30% will be sufficient for the local people needs, and caters African regional market.” Prof Andrews further asked that if you are talking about exports of agriculture products, it will be the issue of protectionism? For example with Japan, Europe and USA. He firmely stated, “As far as the protectionism is concerned, we have to come out of that. All the developing countries demand to re-write the intellectual property rights. This will help the global governance as well. The companies will come with the vision of 60 or 70 % to work in Africa is not coming for the charity. They also need some profit that is genuine. It is good for both. There is a need to come out of the well of the intellectual property rights. With this configuration, it will work for inclusive governance, global development and global governance” (WPC online TV, 2014).

3. GATT 1986 Declaration

He again stated about the GATT 1986 declaration and observed, “Noting that commitments under the reform programme should be made in an equitable way among all Members, having regard to non-trade concerns, including food security and the need to protect the environment; having regard to the agreement that special and differential treatment for developing countries is an integral element of the negotiations, and taking into account the possible negative effects of the implementation of the reform programme on least-developed and net food-importing developing countries” (GATT, 1986).

It is further mentioned specifically under Article 9 (Export Subsidy Commitments), “1. The following export subsidies are subject to reduction commitments under this Agreement :

(a) the provision by governments or their agencies of direct subsidies, including payments-in-kind, to a firm, to an industry, to producers of an agricultural product, to a cooperative or other association of such producers, or to a marketing board, contingent on export performance” (GATT, 1986).

This protectionism does not have any impact on the initiative of the private investors with the 70:30 or 60:40 policy and having no impact of agricultural economics.
4. **GATT 1986 and APAC 2012-2016**

1. Counterfeiting, Sec 2.495 Counterfeiting is first of all the imitation of a product. The counterfeit is not only identical in the generic sense of the term.

2. Protection of Geographical Indications and Designations of Origin for Agricultural Products and Foodstuffs and in the Agreement on TRIPS did not influence the APAC action plan.

3. Protection of Geographical Indications on the National Level.

   The first category comprises all possibilities of protection.

   The second category covers the protection of geographical indications through registration of collective marks (including agricultural labels) or certification marks (or guarantees marks).

   The third category includes all special titles of protection of geographical indications which result from a decision made by the competent government authority establishing the protection. This category, in particular, comprises the protection of appellations of origin-whether they result from a registration with the industrial property office, as under the new Russian law (APAC, 2016).

5. **NDB, Food Security and Africa**

   The NDB agreement guideline supports Action Plan on Agricultural Cooperation (APAC) 2012-2016 and **Article 19 - Methods of Operation states**, a) “The Bank may guarantee---industrial, agricultural or services enterprise with projects in the territories of borrowing member countries” (APAC, 2016).

   **1. How this method of Operation will work for the food security of BRICS?**

   **NDB and Creation of Green Gene Pool Bank (GGPB)**

   The Green means working within the framework of environment sustainability. Conserving and making the most of the planet’s wealth of genetic resources will be crucial for survival, as people will need to produce sufficient and nutritious food for a growing population, NDB should create the creation of Green Gene Pool Bank (GGPB) and work for the agricultural development in the potential area. The adaptation of the agriculture sector is not merely an option, but an imperative for human survival, and genetic resources will form an essential part of any adaptation strategy. This GBP will recommend the particular variety of cereals for the production that will not become the issue of protectionism as well. The GBP should attach with the soil testing laboratories, producing better seeds, green fertilizers and cold storage facilities as per the local climatic conditions that will strengthen the agricultural productivity.

   Looking at the world, the data suggests that Africa needs Green revolution for achieving food security as the population will reach 1.8 billion by 2050. Table-3 highlights the Afro-Asia particulars about the irrigated land area and the potential through irrigation in this sector.
2. How NDB & African agribusiness stakeholders could improve their actions to get better results in the near future?

Table-3 : Irrigated Area Vs. Potential Agriculture land

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<tr>
<td>Total Area</td>
<td>13.4 Bn</td>
<td>3.1 Bn</td>
<td>3.0 Bn</td>
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<tr>
<td>Cultivated Area</td>
<td>1.5 Bn (11.3%)</td>
<td>560 Mn (17.6%)</td>
<td>200 Mn (6.6%)</td>
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<tr>
<td>Irrigated Area</td>
<td>277 Mn (18%)</td>
<td>194 Mn (34%)</td>
<td>13 Mn (6%)</td>
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Source : WWW.FAO.ORG

More than 90% of agriculture in Africa is rain dependent. Africa has abundance of water across the continent. The major water bodies across the African continent includes major rivers such as Blue Nile, White Nile, Limpopo, Niger, Volta, Senegal and Chari and lakes such as Lake Chad, Victoria and Malawi. There are 73 other major rivers and Lakes, 1300 small lakes, 13 major river basins and 104 small river basins across Africa.

Only 20% of it is required to make the continent food secure. It is thus essential to enhance irrigation facilities equipped with extensive infrastructure to fulfil the basic needs’ (Food Security: 3-6). Africa needs water pumping system and water management techniques from India. The requirement of little training to African HRD will help installation of pumps for handling it that will change even the deserts into green areas. The NDB agreement Article 21 - Operational Principles The operations of the Bank shall be conducted in accordance with the following principles:

(i) “the Bank shall apply sound banking principles to all its operations, ensure adequate remuneration and have in due regard the risks involved;

(ii) the Bank shall not finance any undertaking in the territory of a member if that member objects to such financing;

(iii) in preparing any country program or strategy, financing any project or by making designation or reference to a particular territory, or geographic area in its documents, the Bank will not seem to have intended to make any judgment as to the legal or other status of any territory or area;

(iv) the Bank shall not allow a disproportionate amount of its resources to be used for the benefit of any member. The Bank shall seek to maintain reasonable diversification in all of its investments;

(v) the Bank shall place no restriction upon the procurement of goods and services from any country member from the proceeds of any loan, investment or other financing undertaken in the ordinary or special operations of the Banks, and shall, in all appropriate cases, make its loans and other operations conditional on invitations to all member countries to tender being arranged;

(vi) the proceeds of any loan, investment or other financing undertaken in the ordinary operations of the Bank or with Special Funds established by the Bank shall
be used only for procurement in member countries of goods and services produced in member countries, except in any case in which the Board of Directors determines to permit procurement in a non-member country of goods and services produced in a non-member country in special circumstances making such procurement appropriate;

(vii) the Bank shall take the necessary measures to ensure that the proceeds of any loan made, guaranteed or participated in by the Bank, or any equity investment, are used only for the purposes for which the loan or the equity investment was granted and with due attention to considerations of economy and efficiency.”

Context of BRICS-NDB-Africa Partnerships

**Brazil**

* The Cotton project of Brazil and West African countries
* The Rice Culture project in Senegal
* Technology transfers in bio-fuel production in Africa
* Brazilian support to family farming in Africa
* The Pro Savannah project aims to replicate the experience of developing the Brazilian cerrado region (a similar biome to Mozambique’s savannah), which Patriota and Pierri was converted from barren land into one of the most productive agricultural regions in the world. Pro Savannah is a threefold programme:
  i) “Project for Improving Research and Technology Transfer Capacity for Nacala Corridor Agriculture Development (ProSavana PI);
  ii) Plan for Agricultural Development (ProSavana PD); and
  iii) Project for Rural Extension (ProSavanaPE)” (ABC, 2010a and 2010b).

**Russia**

The preferential tariffs for agricultural products exist but only few African exporters use them, mainly from South Africa, Kenya, Morocco and Egypt. Russian authorities should make it possible for more individual African countries to negotiate for their products to enter the market. The African regional economic blocs can be useful instruments for facilitating trade between Africa and Russia (Pambazuka, 2016).

**India**

Department of Agricultural Research and Education (DARE) of India
Indian Council of Agricultural Research (ICAR)
India-Africa Institute of Agriculture and Rural Development
* ICAR-Agriculture Research Centre (ARC), Egypt
* ICAR- Ethiopian Institute of Agricultural Research (EIAR)
* DARE-Govt. of Republic of Eritrea
* ICAR-Golden Valley Agriculture Research Trust (GART), Zambia
* DARE- Deptt. of Agriculture, Forestry & Fisheries, South Africa
* DARE-ICAR MoU India and the Republic of Tunisia
* DARE-ICAR India and Ministry of Agriculture, Mozambique
3. In what specific areas of agricultural development should the BRICS-Africa forge dynamic ties?

Opportunity for Agribusiness Stakeholders

1. Introduce Low and innovative technologies such as drought-tolerant crops, high-quality seeds, fertilizers etc. that will increase income for small-scale farmers.

2. Processing the goods through Value chain approaches and interventions that will increase productivity.

3. Provision of infrastructure and farm mechanization services.

4. Training to farmers and personnel in other allied activities.

4. How NDB and African agribusiness stakeholders could improve their actions?

- Africa’s main exports to BRICS are in the form of raw materials that need to be further processed after entering the country.

- Processing within Africa would build higher income for the African farmers.

- It also enables the products to enter the BRICS market at a higher level of the value chain.

- India train over 600 African scientists, technical and extension officers; offer capacity-building to over 2,500 farmers;
5. **How NDB and African agribusiness stakeholders could improve their actions?**
   - Enable technology transfers; develop infrastructure and skilled manpower for the textile industry; and boost Greenfield investments.
   - India initiative promising opportunity for expanding agro-processing and value-addition opportunities in Egypt, Ethiopia, Senegal, Sudan, and Tunisia.
   - India’s famous low cost technology and trained farmers have assisted in Zambia and Tanzania. BRICS should adopt it simultaneously.

6. **How can BRICS stakeholders better assist their African partners in adapting and adopting the strategies that propel agricultural production and productivity?**
   - Chinese agricultural demonstration stations are available in Mozambique, Liberia and Senegal and Chinese companies’ are either using Chinese labour or using outsource/ outgrowers is not welcomed by the local people in Africa.
   - India’s experience in agricultural education has a lot to offer to Africa.
   - With 99 ICAR institutes and 66 agricultural universities spread across the country this is one of the largest national agricultural research systems in the world.
   - Pan-African e-Network provides unique knowledge collaboration.
   - Setting up of 10 vocational training centres in Burkina Faso, Burundi, Egypt, Ethiopia, Gabon, Gambia, Libya, Mozambique, Rwanda and Zimbabwe.

7. **How can BRICS increased investment in Africa be structured so as to maximize benefits with regards to: human capital development for Africa, farm technology development and the transfer of skills and technology to African farmers?**
   - Many big IT Indian and Chinese companies, such as NIIT and Wipro, with ventures in the African IT market.
   - Rwanda is welcoming investment in this sector in an effort to transform from low-income agriculture based economies to knowledge based service oriented economies.
   - Ethiopia with high enrolment rates in primary education provides a ripe platform for investment in setting up universities including agriculture colleges. It attracts cross border students (Somalia and Sudan) to Ethiopia. Hence, the education sector in Africa merits special attention from Indian investors and It will attract human capital development.
6. **Farm Technology Development**

- Africa is land-abundant and comparatively scarcely populated. With 36 people per square kilometer Africa’s ratio of population to surface area is much lower than that of Europe (120 in the European Union [EU], East Asia (also 120) and South Asia (342).
- Africa is land-abundant and skill-scarce relative to other regions. Africa thus has a high land-to-skill ratio. Comparing regions over time, it shows that countries with high ratios of land to skills tend to export mainly primary products.
- Africa will probably never match the land-skill ratio of Asia or Europe.
- Africa needs all agriculture mechanization right from tractor to other implements

7. **NDB and Modern Agriculture Technology**

NDB should facilitate:
- Sowing machinery such as post hole digger, paddy planter, seed drill for cotton seed, seed cum fertilizer drill, potato planter and multi row vegetable planters, Irrigation systems such as sprinkler systems, drip system, irrigation pumps like centrifugal pumps, stationary diesel engine driven centrifugal pumps, engine set, electric pumps and submersible pumps, Sowing & Harvesting machinery such as maize combine, sugar cane combine, mowers, paddy combine, reaper, wheat combine, fruits harvester, onion harvester, potato digger, cotton picker and Post Harvest Machinery like bailer, tipping trailer, sugar cane grabber, trailer, thresher and maize Sheller. Advance Cold Storage Facility
- Public-Private Partnership (PPP) mode of investment may bring the farm technology for the development of agriculture sector.
- It is estimated that the use of 15 percent of the total land in Africa is sufficient for the domestic consumption including having food stock for the emergency.
- Private investors are buying land in Africa for agricultural purposes.
- The sharing of the total produce should be in the ratio of 70:30, where 70 percent should be reserved for the export & industry and only 30 percent should be used for domestic consumption. This ratio may vary from 70:30, 75:25, 85:15 and so on depending on particular country’s land fertility and the requirements of the total population of the country concerned.

8. **The Transfer of Skills and Technology to African Farmers**

1. BRICS believes that technology should be accessed by all. India is leading a campaign to re-write intellectual property rights (IPR) in favour of all the developing countries to strengthen their financing and capacity building.
2. BRICS respects value addition in exploration, assisting in settling their different sectors and committed its partnership developing Africa’s capacity building as per the need of African countries in policy analysis, planning and training in agriculture sector.

3. The adequate training to the local people of Africa boosts the process in the transformation of skill to them.

9. **What is already being Implemented?**

Different BRICS-Africa partnerships in the fields of technologies & expertise for agricultural growth, food security & rural development

- China’s growing presence in Africa
- India-Africa Integrated Textiles Cluster to support the cotton industry and its processing and conversion into high value products
- India-Africa Centre for Medium Range Weather Forecasting to harness satellite technology for the agriculture
- Fisheries sectors
- Contribute towards disaster preparedness and management of natural resources and
- India-Africa Institute of Agriculture and Rural Development.
  - Soil, Water & Tissue Testing Laboratories,
  - Regional Farm Science Centres,
  - Seed Production-cum-Demonstration Centres,
  - Material Testing Laboratories for Highways

10. **Conclusion**

- The issue of sharing of the total produce should be in the ratio of 70:30 or 75:25 or 85:15 where 70 percent should be reserved for the export & industry and only 30 percent should be used for domestic consumption for a successful green revolution in Africa.
- This 30% should use for the teff, orange-colored sweet potato, pearl millet, bean, hybrid corn, cassava and grazing land and fodder for the animals, which should involve the communities in the decision making process to plan benefits.
- Many African countries lacked radio framework until recently and commercial and community radio stations are still relatively new. Many countries such as Morocco, Zambia, Ethiopia, Kenya have initiated Radio for Farmers. World Bank has sponsored the African Farm Radio Research Initiative and Farm Radio International.
- All India Radio should share this rich experience and strengthen the Pan Africa e-network of India in developing program to help small-scale farmers improve their food security.
The legal infrastructure around property rights and land titles are the prerogatives of the national governments in Africa. It should be clear to the BRICS investors that any country or private investors cannot lease land without the proper permission of their respective governments. There is a clear difference of forcefully occupation and land on lease for 99 years. The lease of land from the African governments is the part of contract law. African governments should involve the local people participation before any lease of land to any private investors. The land belong to any individual cannot be touched without his/her willingness and the stakeholders here should involve the local governments to sign any lease of contract with the individuals or groups. The land titles of the lease land are always belonging to the individual or the government. Indian investors in any part of Africa have signed the proper documentation before taking over any lease land for the agriculture purposes.

1. Commitments from all the stakeholders for the adequate training of HRD and transfer of technology.
2. Need to introduce more agricultural land and introduce applications of S&T in Africa.
3. The need of community farming under Collective Land System should be promoted, which will help in using scientific agricultural implements in Africa.
4. Promote the African farmers to join agriculture education and literacy programmes. Agriculture extension is an important component of agriculture universities throughout the world, which will help Africa Agriculture Education System to strengthen in rural areas.
5. Dairy Farms, Poultry, Piggery, fisheries, Sericulture, Horticulture, Floriculture and Shrimp & Prawn cultivations should be introduced in Africa as an alternate food resource.

Figure-1 is a sample for Dairy industry as an example to understand the process of investment, setting up the market and relations with the consumers in Africa. It attracts medium Indian and African investors working together as joint firm in any African country that will help in understanding the environment of the country, nature of the people cum customer and society.

**Figure-1 : Promotion of IKS and Food Security**

| * Investment in Livestock, farmhouses, feed & other living conditions with Veterinary doctors (Investors-1, 7 million USD). |
| * Investment in Collection of milk, storage and milk processing unit. It will prepare milk packets, cream, curd, Cheese, yogurt, ice cream, and other products (Investors-2, 7 million USD). |
| * Processed Meat to its wholesale distribution. It needs hatchery and refrigeration facilities for meat (Investors-3, 7 million USD). |
Investment in Opening milk distribution outlets and selling milk cream, curd, Cheese, yogurt, ice cream, and other products. Beef meat temperature controlled shops for retail markets (Investors-4, 7 million USD).

* Investment in transportation (through Trucks, mini trucks and other), which will carry milk containers, and other items. The meat from dairy farms to wholesale distributors and supply further to retail markets (Investors-5, 7 million USD).

6. Assist African youth to get training in agriculture sciences and develop technology as per local needs
7. Open Rural Cooperative Banks to strengthen micro-finance and SHGs.
8. Importance of growing trees/plants and the soil conservation awareness programme should be broadcasted on the national TV channels and all channels of Radio including FM stations in regional languages in Africa.
9. African governments should adopt programmes such as food for work and cash for work programmes in the agriculture and related sectors.

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