

Concentration and monopolisation of seed market: Impact on food security and farmer's rights in mountains

**Yamuna Ghale¹
Bishnu Raj Upreti²**

1. The context

The common proverb “Save seed in famine and save life in crowd” has even more relevance in the context of corporate globalisation and privatisation of genetic resources. This statement vividly highlights the importance of plant genetic resources in sustaining production system, respecting farmer's rights and protecting national sovereignty of country of origin of those genetic resources. Protection, promotion and sustainable use of genetic resources for food and agriculture have even specific importance to secure local control over food production, distribution and utilisation system. Therefore, seed has an imperative economic prospect, socio-cultural value, political essence and continuation of viable production system.

The genetic resources in the world were largely considered as a common heritage since the time immemorial. However, the trend of globalisation and privatisation has led to the concentration of resources, knowledge and power in the hands of resource rich multinational corporations (MNCs). The system of granting monopoly rights over genetic resources has consequently posed new challenges in local production, processing and marketing systems of seed and food commodities. The resources rich countries and profit oriented MNCs increasingly having more leverage to shape and determine national policies and priorities in the seed sector. The pursuit of MNC's in influencing the enforcement of Union for Protection of New Varieties of Plants (UPOV), which promotes commercial Plant Breeder's Rights coupled with new patent biotechnologies are becoming more attractive venture to control increasing market of biotech and Genetically Modified (GM) seeds and foods. It has become a fertile ground for seed industries to expand merger processes and consequently control seed, agro-chemical and food markets. It is thus becoming a threat for developing countries specially the mountains, which are considered as the origins of genetic diversity. At the same time, developing countries are yet to develop their competence to protect their autonomy and control over genetic resources, maximise bio-prospect and ensure equitable sharing of benefits and reduce unreasonably high dependence on imported seeds to sustain viable agricultural systems. In the changing context of corporate globalisation, climate change and global food crisis, the corporate hegemony is becoming a threat in subverting national sovereignty undermining democracy, destroying genetic diversity and jeopardising human rights¹, especially in the mountains of global south.

¹ Food, Agriculture and Trade Policy Analyst from Nepal. She can be contacted at yamunaghale@gmail.com

² South Asia Regional Coordinator, Swiss National Centre of Competence in Research North-South, Kathmandu. He can be contacted at bupreti@nccr.wlink.com.np

2. Emergence and expansion of monopoly rights over plant genetic resources

Historically, dealing with goods and services were the major areas of trade and commerce. Since the late nineteen eighties, commodification of life forms, granting monopoly rights and their trade has become an integral part of global trade focus. In this context, seed has become one of the lucrative commodities to exercise monopoly rights by the resource rich multinational corporations. Hence, the patent protection on life form became one of the integral parts of an agreement of Trade Related Aspects of Intellectual Property Rights (TRIPs) within the World Trade Organisation (WTO) package with legal mandate.

Seed is not only a mere input to determine production pattern and food supply system but also a livelihoods strategy for many indigenous communities especially in the mountains around the globe. Their close association with and associated local knowledge and skills on plant genetic resources are under threat due to increasing trend of monopolisation by the corporations. Hence, seed concentration is a high agenda for civil society, indigenous communities, farmers' organisations and environmental groups, who are vehemently apposing the concept and provision of granting monopoly rights and warning about its implications on food security and biodiversity. Despite the consistent lobby, resistance and pressure from different concerned groups, the global trade negotiation processes have deliberately undermined their concerns and voices. The emergence and expansion of monopoly rights is thus becoming a systematic approach of resource concentration, knowledge concentration and ultimately a power concentration in the production and food supply system by the MNCs as depicted in the figure 1 below:

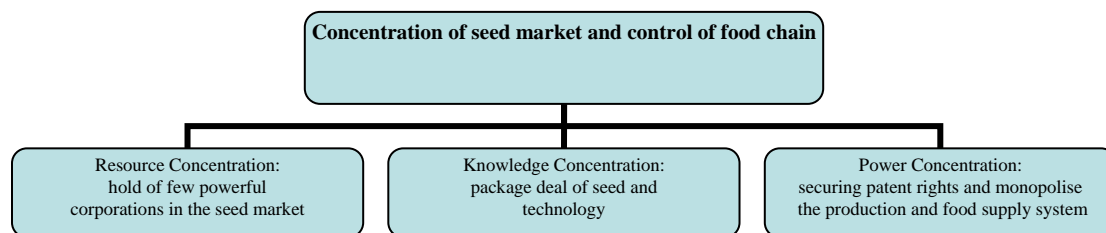


Figure 1: Corporate control of resource, knowledge and power domain in the food chain

3. Global merger and concentration of seed market

The merger and acquisition of seed and agro-chemical corporations across the world is becoming a new and powerful phenomenon. Increasing merger helped MNCs to accumulate and consolidate their power in production and distribution system of seed and food chain. It is estimated that the top ten seed corporations around the globe hold 49-51% of the commercial seed market, and top ten agro-chemicals control 84% of the agro-chemicals market. Likewise, all genetically modified (GM) seeds are bio-patented by multinational corporations and 13 commercial corporations own 80% of GM food marketⁱⁱ. The world's top seed, agro-chemical and food and beverage companies and the bio-patent presented in the table 1 below depicts the merger process and hold of certain companies in the total production chain.

Rank	World's largest seed corporation (2006)	World's largest agro-chemical firms (2007)	World's top ten Food and Beverage Corporations (2001)	Hold of Agbio Patents (2001)	Patent applications for "Climate-Ready" genes and traits (2008)
1	Monsanto including Delta and Pine Land	Bayer	Nestle	Pharmacia (Monsanto-287)	BASF (21)
2	Dupont	Syngenta	Philip Morris (Kraft + Nabisco)	Dupont (279)	Syngenta (7)
3	Syngenta	BASF	ConAgra Inc. (+ International Home Foods)	Syngenta (173)	Monsanto (6)
4	Grupo Limagrain	Dow Agrosciences	Unilever (+ Bestfoods)	Dow (157)	Bayer (5)
5	Land O' Lakes	Monsanto	Coca Cola Company	Aventis (77)	Cers Inc in partnership with Monsanto (4)
6	KWS AG	DuPont	Pepsico Inc.	Grupo Pulsar (38)	Mendel Biotechnology Inc with equity stake of Monsanto (3)
7	Bayer Crop Science		IBP Inc.		Evogene Ltd. With Monsanto and Dupont(2)
8			Diageo		Dow (2)
9			Mars Inc.		Dupont (Pioneer-HiBred-1)

Table 1: Global companies and or corporations with their hold on seed, agro-chemical, food and beverage markets and bio-patent hold; source: ETC group (2001; 2008)

The increasing merger and market hold scenario shows its inter-linkages and strong motivation to invest in producing terminator sequel through genetic engineering and holding bio-patents. In this process, production of GM crops is widely expanding around the globe. Within the decade of 1996 and 2007, the coverage of biotech and GM crops increased by 67 fold with its coverage of 12.3 million hectares which accounts for 5% of total cultivable area in the worldⁱⁱⁱ. In 2007, 12 million farmers of 23 countries, 90 percent of who are resource-poor farmers from 12 developing countries produce GM crops. It shows that the expansion of GM crops is a consequence of global merger and market concentration, which occupies one quarter of the total value of the commercial seed market worldwide^{iv}. The trend is increasing despite of low public acceptance. Furthermore, the public research system in developing countries in specific the Least Developed Countries (LDCs) is not strong enough to deal with the demands of the

farmers and market led processes. Majority of the farmers in mountains of developing countries are thus dependent on farm saved seeds. Though the farmers and indigenous communities in specific have vast knowledge in improving local cultivars and landraces that are suitable to the local geographical requirements, there is very less investment in research and development of new varieties of plants, recognise and promote community based seed production program. There is an ample opportunity to improve local seeds with coupled strategy of mobilising farmers and local communities with adequate support of resources and technology transfer to developing countries. If any effective measures are not taken urgently, developing countries will have severe problem to protect and promote their plant genetic resources and tackle the threats arising from monopolisation of genetic resources and market by MNCs. Another major challenge brought by concentration of seed market is the threat of bio-patenting and bio-safety. According to the GM contamination register from 1996-2006, there were 146 publicly documented contamination events involving 42 countries in six continents^v. It requires both farmers and corporations to bear the burden of proof against gene contamination with enormous amount of legal and financial burdens.

4. Myths of promoting GM seeds, monopoly rights and market concentration

- **Granting monopoly rights is an incentive to investors for innovation and technology transfer**

The worldwide promotion of monopoly rights as an incentive for investment on research, innovation and transfer of technology is the arguments given by the WTO and MNCs. However, different studies have shown that concentration of the seed industries is resulting to less competition and less innovation^{vi} and it has limited the choices for farmers instead. It proves that granting of the patents rights is not a necessary condition to promote transfer of technology (ToT). Therefore, it is vital to rethink about other appropriate incentive mechanisms for the investors to recognise their investment and contribution rather than of granting monopoly rights.

- **GM seed is the solution to feed the increasing population**

Worldwide promotion of GM crops is in increasing trend and having multiple impacts on biodiversity, farmers' rights, local autonomy and national sovereignty. Worldwide food insecurity and hunger is in fact the manifestation of inequity in production, distribution and benefit sharing mechanisms. Gene and trait specific GM crops are claimed to be insect pest resistant however, different studies have shown that these crops are not necessarily more productive compared to indigenous varieties but it requires high investment to prevent damages done by pests. For example, 'international agriculture trade is worth around US\$ 600 billions and pest damage to crops worldwide also runs into billions of dollars'^{vii} and cost of pest management in GM crops even increasing. Hence, GM seed is not an ultimate solution to minimise cost of production, enhance productivity and feed the increasing population of the world.

- **Global trade as a solution to deal with climate change and price hikes**

Promoting diverse and non-gene pollutant seeds has potential to make agriculture sustainable, promote healthy ecosystem through carbon sequestration and low carbon emission. Viable local food production system to a large extent can deal with negative impacts of global food insecurity and price hikes. Likewise, developed countries failed to implement their commitment of providing 0.7% of their GNP as development aid towards developing countries. Likewise, equitable investment in research and development, production technologies and optimise profitable marketing mechanisms is still a challenge especially in the mountain region of developing countries. Therefore, increasing trend of securing monopoly rights over “climate-ready” genes kinds of initiatives within the trade package cannot be an only solution to deal with food security of poor people in the global south. Therefore, promotion of fair trade with equitable access to opportunities and benefits created by globalisation can be more responsive to climate change and price hikes than to simply advocate for free trade.

5. Is ‘Climate-Ready’ seeds a new recipe in the seed sector?

Global climate change has created both opportunities and challenges in the seed sector worldwide. The resourceful multinational life science corporations such as BASF, Monsanto, Bayer, Syngenta, Dupont and Biotech partners have been advancing in new processes of gene and trait specific sequencing to respond the impacts of climate change. The corporations already have filed 532 patent documents (a total of 55 patent families) on so-called “climate ready” genes at patent offices around the world. In the face of climate chaos and a deepening world food crisis, the Gene Giants are gearing up for patent rights offensive to re-brand themselves as climate saviors^{viii}. The focus on so-called climate-ready genes is a golden opportunity to push genetically engineered crops as a silver bullet solution to climate change. But the ETC group claims that patented techno-fix seeds will not provide the adaptation strategies that small farmers need to cope with climate change^{ix}. According to the Human Development Report 2007/2008, “adaptation is ultimately about building the resilience of the world’s poor to a problem largely created by the world’s richest nations”^x. Therefore, “climate-ready” seeds may be a good recipe in the view of MNCs but not necessarily responsive to the needs of poor in global south. In this context, the people in the mountain will even suffer from the limited access to resources and technologies to cope with the challenges posed by the global processes.

6. In pursuit of safeguarding food sovereignty in mountains

The time has come to safeguard the biodiversity and maintain ecosystem of the planet earth for the present and future. Seed is the major source of life and basis to maintain micro and macro ecosystem. Because of this multiple potential, the socio-political, economic, cultural, and environmental value of seed has to be promoted by long term creed rather than the fulfilment of short term greed. In this effort, there is an urgent need to refocus on global priorities towards the following agendas:

6.1 Global partnership in research, development and transfer of technology:

Seed sector is a lucrative but sophisticated business. Every community and state needs a sophisticated system to promote the system of breeding, testing, certification, reproduction and distribution of seeds suitable for each micro-climatic region. It requires optimisation of opportunities for the small scale producers to promote diversified, stable and micro-climate specific food basket. Therefore, global partnership among resource poor and resourceful countries, international financial institutions and private sectors is must to promote research, development and transfer of technology to support the resource poor in the global south.

6.2 Protecting farmer's rights to save, use and sell of farm saved seeds:

Majority of the small farmers in the mountains of the developing countries are both producers and consumers, who should have the principal control over the production process from sowing to harvesting. However, farmers are losing their autonomy to a) secure their rights for saving and re-using seeds, b) application of indigenous knowledge and skills they have obtained and promoted since centuries, c) participation in decision making processes and d) getting compensation during the time of crop failures etc. The package deal promoted by the multinational seed firms has forced farmers to be dependent on market for the source seed supply. Therefore, the countries in the global south should be more vigilant, lobby with like-minded alliances and enhance their competence to negotiate at different levels to promote farmers autonomy and rights.

6.3 National integrity to promote food sovereignty in mountains:

Nation states especially in the global south have specific responsibilities to tap opportunities and mitigate negative implications brought by corporate globalisation led liberalisation and privatisation processes. The governments in the south need to reorient their agriculture and development plans with clear political vision and support system in collaboration with farmer's organisations, civil society, private sectors and other relevant partners. The systems need to be reconstructed and strengthened, human capacities are to be enhanced and assessment of potentials of bio-prospects needs to be promoted ensuring the provision of prior informed consent and equitable share of benefits. They also have to ally with like-minded blocs at regional and international levels to safeguard national interest and to promote food sovereignty.

6.4 Dealing with global phenomena of climate change, food crisis and adaptation of agriculture systems

In the world of today, the poor in the global south are bearing the burden of climate change the most. Climate change has larger and visible implications on agricultural system and food chain. Different studies show that climate change will require both adaptation and mitigation processes. In this frontier, development, conservation and promotion of indigenous seeds, associated knowledge and technologies and adoption of

production practices to respond the need of poor and small farmers in responding the opportunities and challenges posed by the climate change. If not, the poor and small farmers especially of the mountains in the global south will be in the situation to pay the cost of climate change and suffer from hunger the most. Therefore, the most vulnerable communities in developing countries need assistance to adapt with the climate changes and build local competence to mitigate negative implications.

7. Conclusions

Seeds are the first link in the total food production, distribution and utilisation chain. Its importance therefore is inevitable not only for the present but equally for future generation and sustaining healthy planet earth. Since, increasing dependency on seed market undermines local systems, erodes gene diversity and lessens the options for poor and small farmers and provide new foothold for the corporations in the seed market, it requires collective response to deal with negative aspects of corporate globalisation and seed market concentration. Otherwise, the cost of diminishing the genetic diversity and autonomy of local communities and countries of origin will have to bear the consequences of it in the long run. The upcoming trend of priority given by global stakeholders like World Bank (WB) and Organisation for Economic Cooperation and Development (OECD), in agriculture sector is a good gesture. Therefore, realisation of importance of seed security for food security is very vital. It requires wider understanding, collaboration and investment to respond the long term implications of seed market concentration on biodiversity, food security, environmental stability and national sovereignty.

ⁱ Rafi., (2001), Globalisation, Inc.: Concentration of Corporate Power: The Unmentioned Agenda, RAFI Communiqué, I. 71 July/Aug 2001

ⁱⁱ Bio-patents controlling life, Voice of Irish Concern for the Environment, Dublin

ⁱⁱⁱ Global status of commercialised biotech/GM crops: 2007, ISAAA Brief 37-2007: Executive Summary, International Service for the acquisition of agri-biotech applications, Manila, Philippines

^{iv} Global seed industry concentration, 2005, etc group communiqué, September/October, Issue no. 90, 2005

^v Seeds of passion, In: Seedling: Biodiversity, Rights and Livelihood, April, 2008, GRAIN, Spain

^{vi} Global seed industry concentration, 2005, etc group communiqué, September/October, Issue no. 90, 2005

^{vii} All eyes on Agriculture: FAO and EU: Unlocking rural potential, FAO, 2008

^{viii} Patenting the “Climate Genes” and capturing the climate agenda, In: etc group; action group on erosion, technology and concentration Communiqué, May/June, 2008, Issue no. 99

^{ix} *ibid*

^x Human Development Report, 2007/08, Fighting Climate change: Human solidarity in a divided world, UNDP