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Genetically Modified (GM) Food and International Consumer

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Abstract: Economic globalization represents both chance and challenge for the achievement of social and economic rights, including the right to food. At present genetically modified (GM) foods meet a variety of responses from consumers, and personal assessment of the risk benefit ratio influencing overall perception. There is a controversial perception of risk assessment in terms of health, environmental, economic and ethical risks. While the scientific community is indisputable about the safety of GM crops, consumers are not entirely confident and remain divided over the subject. Different views are being expressed together for and against GM food.

However, awareness has significantly increased alongside the rapid growth and commercial sale of GM crops across the globe. GMO proponent big companies are interested in the profit potential promised by the technology and increasing their market share over patents and royalties. They are not interested to protect consumer right. It also raised the questioned GM food feed the hunger world. The food safety issues of GMOs have also raised questions about the adequacy of regulatory devices of biotechnology and biosafety for consumer protection.

This article will examine the controversial points concerning GMOs in public health concerns, environmental and socio-economic impacts. Also, highlight the public right to access and information of GMO under the Aarhus convention.

It will touch the issue whether the regulatory framework on tracing and labelling are truly essential, or whether trade policy to increase GM products sale. Finally, it claims that international law needs rethinking concerning GMOs to support consumer interests and rights.

Keywords: Genetically modified foods, Health, Environment, Monopoly, Public participation, Consumer.

Introduction

In this era of globalization and rapid growth of world economy genetically modified (GM) food is a matter of major international debate. GMOs are organisms whose DNA has been transformed in a scientific method through genetic engineering (GE). It means copying a gene from one living organism and adding it to another organism. For example, taking a gene from any bacteria, plant, or animal and adding it to another plant, gives the plant properties contained within the added gene.[1]

The appearance of dramatically higher food prices and climate change has increased concern in the GMO crop varieties. Promoters claim far reaching social benefits of GMOs and helping economic growth yielding agro-environmental benefit. On the other hand, it raises questions on the potential benefits of this technology. [2] Different countries adopt different environmental health and safety regulatory programmes for GMOs because they assess GMO benefits and in their interests, differently. Consequently, it creates sharp trade conflicts. GMO products exports from countries that support GMO. Nevertheless, in safety issues, consumers are not entirely confident and remain divided over the subject.[3]

This essay will examine the controversial points concerning GMOs in health risk, the environmental aspects and finally, it will touch upon the economic issues of GM crops. However, the question is whether GMO is sustainable or merely a trade technique of shifting the economic and environmental burden of responsibility on to consumers or future generations.

[1] Mystery B, 'Genetically modified organisms and the precautionary principle: how the GMO dispute before the World Trade Organization could decide the fate of international GMO regulation' (2003) 22 Temp Envtl L & Tech J 171.

[2] Richard B S,'GMO trade regulation and developing countries.' (2009) Acta Juridica 320

[3] Susan C, Levidow L,' Exploring the links between science, risk, uncertainty, and ethics in regulatory controversies about genetically modified crops.'(2000)12 JA EE 29

Risks of GMO

Over the past few years, many countries have completely banned GMOs for lack of safety knowledge for human consumption. The emotional debate remains about the deficiency of legal mechanisms to protect consumers from health and environmental GMO risks.[4] Although in the medical applications GMOs are welcomed but it has a multidimensional risk. As a public health problem, the potential risk of a food product is based on scientific data, so the risk assessment of GMO should be executed on both health and the environment.[5] . Risk assessment has a controversial opinion in terms of health and environmental, economic, social or ethical risks. There are many scientific studies that clearly show the risk of GM food.

Normally GE crops contain new proteins which will create new allergies. Alternatively, new allergens can be introduced unknowingly and known allergens can be transferred to the modified variant. For example, when a gene from the brazil nut was introduced into the soybean, the allergen from nut transferred to modified soybean. [6] Also, allergic reactions have been detected in tacos made from "Star Link" GM corn in USA.[7]

In case of antibiotic resistance in plants, GMOs carry a gene that has antibiotic qualities in order to fend off bacteria which is harmful to plant growth. E-coli is a bacterium that

[4] David G Salmon, '19 European Countries Restrict the Cultivation of GE Crops' (GAIN Report, 13 October 2015) <http://gain.fas.usda.gov/Recent%20GAIN%20Publications/19%20European%20countries%20restrict%20the%20cultivation%20of%20GE%20crops%20_Paris_EU-28_10-13-2015.pdf> accessed 3 May 2016

[5] Magaña-Gómez, Javier A and Ana M C, 'Risk assessment of genetically modified crops for nutrition and health' (2009) 67Nutrition Reviews 1.

[6] Richard (n2)

[7] Carter, C A and Smith A, 'Estimating the market effect of a food scare: The case of genetically modified star link corn.' (2007)89 The Review of Economics and Statistics 522.

is present in the human digestive system that could be affected in this way.[8] Although GE plants is reducing the use of chemical pesticides but bio pesticides will pose the same health risks as chemical pesticides or even pose a greater risk since the bio pesticides cannot be washed off.[9] Canadian Research found the presence of pesticides linked to GM foods in maternal, fetal and non-pregnant women's blood. They also identified the presence of Monsanto's Bt toxin.[10]

Several recent studies found that glyphosate has potential to be an endocrine disruptor. Endocrine disruptors are chemicals that can interfere with the hormone system in both human and animal. These can cause developmental disorders, birth defects and cancer tumours. [11] Scientific Data also shows that Monsanto's glyphosate caused a number of birth malformations since at least 2002.[12] Another German report states that Glyphosate residue could reach humans and animals through feed and can be defecated in urine. It explains the existence of glyphosate in urine and its accumulation in animal tissues is alarming even at low concentrations.[13]

Additionally, pesticide resistant GE plants can have a negative effect on insects or animals, which is not the target of the pest control. For example, GE corn and cotton can have

[8] Mystery (n1)

[9] Aris, Aziz and Samuel L,' Maternal and fetal exposure to pesticides associated to genetically modified foods in Eastern Townships of Quebec, Canada'(2011)31 Reproductive Toxicology 528.

[10] ibid

[11] 10 Scientific Studies Proving GMOs Can Be Harmful To Human Health(http://www.collective-evolution.com/2014/04/08/10-scientific-studies-proving-gmos-can-be-harmful-to-human-health/)accessed 15 May 2016.

[12] ibid

[13] Thongprakaisang S, Thiantanawat A, Rangkadilok N, Suriyo T and Satayavivad, 'J Glyphosate induces human breast cancer cells growth via estrogen receptors' (2013) , 59, Food and Chemical Toxicology129.

negative effects on Monarch butterfly larvae when the pollen from these plants is blown on to milkweed leaves.[14]There are other possible environmental drawbacks to the use of GM crop, including claims of cross-pollination of neighbouring crops, damage to non-pest native fauna. GMO decreases genetic diversity. As naturally grown plants with reduced genetic diversity cannot protect itself from natural disasters and insects.

From ethical point of view, if pork genes used to a tomato, it will create controversy in the Muslim, Jewish and vegetarian's.[15] Lee mentioned that the precise understanding of agricultural biotechnology as a trade issue rather than environmental or social issue. Currently, GMOs have been considered a threat to environment and human health. [16] It also cuts costs for consumers and raises livelihoods for GM promoters in developed countries.

Europe perspective

In Europe, GM crops authorisation process is based on the risk assessment for health and environment. Biosafety concerns are closely linked to the precautionary principle (PP) which applies in 'dubio pro natura'.[17] It explains that' in case of threats of serious damage, lack of full scientific certainty will not be used as a reason for postponing cost-effective methods to prevent environmental degradation'. [18] After the adoption of EC Regulation 178/2002, the ECJ has returned to the PP on the basis of need for the Community

[14] ibid

[15] Zarrilli, S ,' International trade in GMOs and GM products: National and multilateral legal frameworks.' (2005) Available at SSRN 1280032

[16] Maria L,' EU regulation of GMOs: Law and decision making for a new technology.' (Edward Elgar Publishing, 2009)

[17] Phillippe Sands and others, 'Principles of International Environmental Law' (3rd edn. Cambridge University Press 2013),220-22

[18] United Nations (UN) Rio Declaration on Environment and Development (14 June 1992) UN Doc A/CONF.151/26. Principle 15

legislature to take account of this principle when it adopts, in the relation to internal market policy, for human health protection. [19] However, the role of PP is critical to control of GM production which is increasingly in the hands of the private sector. In current world trade system, it is not easy for individual States to adopt PP on the GM food safety issue, because trade geared towards the protection of commercial interests but not towards the protection of consumer's interest.[20] The European Food Safety Authority and the member states considered risk assessment for food safety.[21]

New Directive (EU) 2015/412 [22]allows member states to restrict the GMOs cultivation. This new Directive opens the technique for different solutions within the European Union and filed the debate on coexistence of GM crops with conventional farming. The coexistence between GM and non-GM supply chains affects the possibility of GMO-FREEs projects and can cost might increase for both GM and non-GM farmers. Including socio-economic concerns in the Directive light of risk assessment might help the EU for better perspective.[23]

As to the consumer perspective there is doubts about GM crops financial benefits. Several reports show that costs for monitoring, separation, labelling, and testing eventually

[19] ECJ has confirmed the validity of several articles of Directive 2002/46/EC of the European Parliament and of the Council of 10 June 2002 on the approximation of the laws of the Member States relating to food supplements. *The Queen ex parte Alliance for Natural Health v Secretary of State for Health and National Assembly of Wales*, 2005 E C R 1-06451.

[20] Maria (n 16)

[21] Joan Claybrook, 'The US Threats Against Europe's GMO Policy and the WTO SPS Agreement' (Public Citizen,) <www.citizen.org> accessed 2 May 2016.

[22] Council Directive (EU) 2015/412 of 11 March 2015 amending Directive 2001/18/EC as regards the possibility for the Member States to restrict or prohibit the cultivation of genetically modified organism (GMOs) in their territory [2015] OJ L68/1.

[23] Eleonora S ,' Coexistence: A New Perspective, a New Field.' (2016) 8 A A S P 449

reduces the economic profit of lower production costs of GM crops.[24] For example, in Germany, GM crops commercial cultivation costs estimated to be up to 12.8% higher for rapeseed products, 4.9% for sugar beet products and 10.7% for wheat products. And it will increase price for a commodity crop like maize if passed on to the consumer. [25]Europe food industry is already on high economic burden and multipliers can only be accepted if there is no huge cultivation of GM crops.

Spain is cultivating a large amount of GM crops but there are still very few reports to contribute to the Spanish consumer acceptance of it. Besides, in Spain the negative social and economic effects of GM cultivation have been documented.[26] Normally farmers stay away from making official complaint because they receive pressure from powerful GMO seed suppliers. Additionally, there are no mandatory co-existence measures in many EU Member States. The liability regime is not also strong at European level. Environmental Liability Directive 2004/35,[27] implements the principle polluter pays. It also aims to prevent harms through preventive measures under article 191 TFEU. [28]

[24] Rosa B,' Coexistence of plants and coexistence of farmers: is an individual choice possible?' (2008)21 J A E E 437.

[25] The socio-economic effects of GMOs - Friends of the Earth Europe https://www.foeeurope.org/sites/.../FoEE_Socio_economic_effects_gmos_0311.pdf accessed 10 May 2016

[26] ibid

[27] Council Directive 2004/35/EC of 21 April 2004 of the European Parliament and of the Council on Environmental Liability with Regard to the Prevention and Remedying of Environmental Damage [2004] OJ L 143.

[28] RSPB, BirdLife International and GeneWatch UK, 'Environmental Liability for Damage Caused by GM Organisms: Bringing the European Directive into National Law' <https://www.rspb.org.uk/Images/eldgm_tcm9-153633.pdf> accessed 2 May 2016

However, there is also debate over labelling under Regulation 1830/2003 [29] . Consumers do not have full access to specific information of food content. Customers cannot get any information if meat is produced from GM feed or wine from GM yeast. [30] In case of imported food is also problematic that do not make such distinctions between traditional and GM food. Labels are mainly tools for creating new attractive markets. Moreover, the costs of labellisation is borne by producers and consumers.[31]

Recently, Lidl, UK superstore has recalled its own-brand tinned herring fillets foods, warning customers not to eat them because the labels did not contain potential about allergens. But at the same time, in German supermarket were selling that products with the same label.[32] Lack of labelling harmonisation also creates confusion to the consumer. EU Regulation 1169/2011, [33]explains the mandatory mentions of health policy. A member state cannot impose mandatory labelling on the social and ethical qualities of a food item, it would be considered as a trade restriction on imports. So, labelling issue is unclear and not consumer protective.

[29] Council Regulation (EC) 1830/2003 of the European Parliament and of the Council of 22 September 2003 concerning the traceability and labelling of GMO and the traceability of food and feed products produced from GMOs and amending Directive 2001/18/EC [2003] OJ L268/24, art 4.

[30] Du Li,' GMO Labelling and the Consumer's Right to Know: A Comparative Review of the Legal Bases for the Consumer's Right to Genetically Modified Good Labelling.' (2014)8 McGill JL & Health 1.

[31] ibid

[32] Lidl recalls 'potentially deadly' foods warning customers NOT to eat them. http://www.msn.com/en-gb/news/uknews/lidl-recalls-potentially-deadly-foods-warning-customers-not-to-eat-them/ar-BBt2A0Q?li=BBoPWjQ&ocid=wispraccessed accessed 16 May 2016

[33] Regulation (EU) 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers. O J L 304 (2011): 18.

Consumers' Right to Know

The UN General Assembly has recognized the consumer's right to know, when it approved the Guidelines for Consumer Protection. Article 3 of the UN General Assembly stated that access to information enable consumers to make choices of different needs per individual requirements.[34]

Genetic modification contributes significant implications in the health, the environment, religious views and particularly in the economic sector. Consumers around the world have right to know full information of the technology's safety whose genetic construction has been changed. Information accessible to consumers must contain the full disclosure of the safety evaluation of GM foods, besides the clear labelling of GM products that reach to the marketplace.[35] Because GM products have already reached the market unlabelled. On the other hand, Economic agents adopted voluntary labelling to these concerns and they are private labels. It suffices to some extent but the labels are not consistent. [36]

Consumers deserve to know and choose what they eat and strongly demand labelling of such foods. Labelling information would help consumers to buy or to avoid GM food. Appropriate labelling will also benefits consumers to decide to purchase products created accordingly of this new technique.

[34] The General Assembly in resolution (adopted, 39/248 of 16 April 1985, revised 70/186 of 22 December 2015)

[35] Consumer International, 'Genetically Modified Foods: Magic Solution or Hidden Menace?' <http://www.consumersinternational.org> accessed 25 April 2016.

[36] Catherine Del Cont, 'Non Solo Cibo, Not Just Food: Which Compatibility Between Consumers' Ethical and Social Preoccupations and Trade and Commercial Law' (2016) 8 AASP 270

At present, labelling is mandatory in more than 60 countries, with Europe.[37] Recently, the USA enacted Vermont Act, 120 making labelling mandatory for GM products. [38] This is definitely not a good news for food companies and they are trying to lobby against the law. [39] Similarly, in EU, the Food and Feed Chain partners that include farming body Copa-Cogeca and others have tried to persuade the Commission to change the decision with total failure. [40] Now companies face pressure to label their GM products. Consequently, to convince the consumer, they argue that labelling would increase the expenses in foodstuffs.[41] Nevertheless, the Consumers Union analysis showed that the increase in expense was $2.30 per person annually. [42]

The USA feels that mandatory labelling is more stringent than the Codex general standard and they are trying to find the rationale behind it.[43]They also hope that only the

[37] Christina Sarich, 'The 64 Countries that Require GMO Labelling-US Buckles Under Biotech Pressure' (Natural Society, 13 October 2014) <http://naturalsociety.com/64-countries-require-gmo-labeling-not-united-states/> accessed 30 April 2016.

[38] GMA, 'Vermont GMO Labelling law' <http://www.gmaonline.org/issues-policy/state-affairs/vermont/> accessed 30 April 2016.

[39] Kati Gallagher, 'Another Attack on Our Right to Know: Action Needed!' (Vermont Right to Know GMOs, 22 April 2016) <http://www.vtrighttoknowgmos.org/another-attack-right-know-action-needed/> accessed 19 April 2016.

[40] National Assembly for Wales, 'Genetically Modified Food and Feed: The Authorisation Process' (August 2015) <http://www.assembly.wales/> accessed 25 April 2016.

[41] Consumer International (n 35)

[42] Andrew Dyke and Robert Whelan, 'GE Foods Labelling Cost Study Findings' (ECONorthwest, 12 September 2014) <https://consumersunion.org/wp-content/uploads/2014/09/GMO_labeling_cost_findings_Exe_Summ.pdf> accessed 17 April 2016

[43] WHO and FAO, 'Codex Alimentarius: International Food Standards' <http://www.fao.org/fao-who-codexalimentarius/codex-home/en/> accessed 26 April 2016.

harmonised EU law is mandatory while the domestic labelling remains voluntary.[44] Nonetheless, although the Codex Alimentarius provides food standard which is good for the consumers, its nature is purely voluntary. This means that a state has the discretion to follow this code and right now, EU law is stronger which provides assurance for consumers than the Codex.

Different consumer organisations say that GM foods labelling should be mandatory. There should be an internationally recognized system to ease the information of GM products for consumers to understand.

Public participation

At international level, the Cartagena Protocol[45] and the Aarhus Convention[46], at European Union level, by certain regulatory provisions, outlined the rights public of participation in GMO context. Nevertheless, public participation rights in the decision-making process not focused under the SPS Agreement[47] of the WTO.

Arhus convention recognises public participation by amendment and it is one of the pillars of it. But, it does not contain any Procedural instrument rules on environmental quality. Only contains some of the tools to guarantee environmental quality.[48] However, it has the capacity to play a role in the forming of decisions on specific proposed

[44] '2014 Report on Technical Barriers to Trade' (United States Trade Representative, April 2014)

[45] Cartagena Protocol on Biosafety to the Convention on Biological Diversity, (Signed 15 May 2000, Enacted 11 September 2003)

[46] Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (adopted 25 June 1998, entered into force 30 October 2001) 2161 UNTS 447

[47] Agreement on the Application of Sanitary and Phytosanitary Measures (15 April 1994) LT/UR/A-1A/12.

[48] Michael C,'Public participation in the regulation of genetically modified organisms: a matter of substance or form?' (2010)12 Environmental Law Review 12.

environmental activities (Article 6)[49] and plans, programmes and policies relating to the environment (Art 7) besides access to justice under Article 9. Though, it is not totally clear to what extent these provisions apply to the regulation of GMOs.[50]

Article 169[51] of the TFEU also deals with the consumer's right of information. Regulation (EC) 1367/2006[52] deals with access to information, public participation in decision-making process and environmental matters.[53] The process allowed for discussion of the 'other 'issues around GMOs and allowed to have discussion of scientific and economic issues. It is clear that their general effect is significant to increase civil society's role.[54] Still, there is no certainty if decision-making process is accepting any of the public view. However, the cost of challenging legislation once enacted may prove to be prohibitive. Further, questions may be raised as to the efficacy of public engagement in technical or scientific

[49] 'Articles Particularly Relevant to GMOs Under the Aarhus Convention Including the Amendment' (Biosafety GMO Portal: Republic of Croatia,) <http://www.gmo.hr/eng/Legal-Frameworks-on-GMOs/Other-Int.-Conventions-Treaties-and-Organizations/UNECE-Aarhus-Convention/Articles-particularly-relevant-to-GMOs-under-the-Aarhus-Convention-including-the-Amendment> accessed 14 May 2016.

[50] Michael (n 48)

[51] Consolidated Version of the Treaty on European Union and the Treaty on the Functioning of the European Union (TFEU) [2008] OJ C115/13.

[52] Regulation (EC) No 1367/2006 of the European Parliament and of the Council, 6 September 2006, on the application of the provisions of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters to Community institutions and bodies.

[53] (OJ L264/13 25.9.2006) Art. 9. In this case, the European Commission is to ensure conformity with the Communication from the European Commission, General Principles and Minimum Standards for Consultation of Interested Parties by the Commission COM (2002)704: Commission Decision 2008/401/EC (OJ L140/22 30.5.2008) Annex.

[54] E. Reid and J. Steele, 'Free Trade: What is It Good For? Globalization, Deregulation, and "Public Opinion" (2009) 36 JL S 11-31.

issues.[55] As a result, public participation is easy for policy level, but does not seem to have been explained into the legal mechanisms which have been enacted.

International level

In international level, consumers have mixed opinions on biotechnology. Consumers' attitudes towards risks and government approaches to food safety vary from one country to another. In this context, GMO regulation controversies with the EU and the US in WTO are well-known.[56] International agreements such as the SPS Agreement have not solved all the problems. It established the US-based 'scientific risk assessment', trade principle for food safety and agro-biotech issues. And in the environment regime it based on 'Pp', promoted by the EU and represented in the Cartagena Protocol on Biosafety. [57] The Cartagena Protocol deals with an adequate level of protection in the 'field, safe transfer, handling and use' of GMOs. But mainly GM crop producing and exporting country US, Canada are not members of Cartagena.[58]The EC-Biotech [59] case brought conflicting views on GMOs into public. The outcome of this case is that if State wants to pursue a higher level of protection of the environment and health safety issues may be restricted by WTO

[55] Jane H, Lee M,' *Environmental protection, law and policy: Text and materials.'* (Cambridge University Press, 2007)

[56] López C R,' Regulation of GMOs: the commercial conflict between the United States and the European Union.' (2002) NEW MEDIT (CIHEAM)

[57] Winham G R, 'International regime conflict in trade and environment: the Biosafety Protocol and the WTO.' (2003) 2 World Trade Review 131.

[58] Cartagena Protocol on Biosafety to the Convention on Biological Diversity, (Signed 15 May 2000, Enacted 11 September 2003)

[59] *European Communities: Measures Affecting the Approval and Marketing of Biotech Products-Report on the Panel (21 November 2006) WT/D291/R*

regulations unless they accord with scientific evidence under the general exceptions of art xx(b) of the GATT[60] or in the case under art 3.3 of the SPS agreement.[61]

It is often argued that we need GM crop to feed the world. But GM crops research not improving production of staple crops, where hunger and malnutrition are serious problems.[62] Moreover, in developing countries farmers, faces difficulties to use GM seeds in adverse climate such as drought or extreme temperatures. Most of the GMOs will probably be aimed at rich markets, with no economic benefit for developing countries or poorer consumers.[63] Consumer approach to GM products depends on information of product benefits and risks. For example, consumer rejected many food-manufacturing companies GM products such as Frito-Lay Inc's maize for its Doritos chips and other maize-based snacks, because the company was not concerned about consumer's health risks.[64] During the 2002/03 drought, Zambia rejected GMO maize because if did not contain enough information on health risks from consumption.[65]

Further, GM crop is represented by the freedom of choice for consumers and farmers. It creates major socio-economic and cultural dilemma among farmers because of the high

[60] General Agreement on Tariffs and Trade (adopted 14 April 1994 entered into forced 1 January 1995) 1867 UNTS 187, art XX.

[61] Agreement on the Application of Sanitary and Phytosanitary Measures (15 April 1994) LT/UR/A-1A/12.

[62] Maria (n 16)

[63] Genetically Modified Foods: Magic Solution or Hidden Menace?<www.consumersinternational.org/.../genetically%20modified%20foods-%20magic%2...> accessed 25 April 2016.

[64] Potential benefits and risks of GMOs on biodiversity – IUCN https://cmsdata.iucn.org/downloads/ip_gmo_09_2007_1 accessed 25 April 2016.

[65] biotechnology,food security and environmental - Consumers ... www.consumersinternational.org/.../biotechnology,%20food%20security,%20trade%... accessed 30 April 2016.

prices of patented seeds, with purchase requirement and prohibition of the traditional practice of saving seeds from previous seasons. [66] There are several cases about Monsanto's GM seeds patent infringement, and farmer's harassment by the companies is well known.[67] In 2009, only ten companies controlled 80% of the world seed market and 75% of the global agrochemical, energy and pharmaceutical industry. It demonstrates behind the reason for food monopoly.[68]

Modern biotechnology is firmly in corporate hands. Even many African countries have to rely on the risk assessment of GMOs prepared by the biotechnology companies themselves. Checks and balances are required to prevent the monopoly of multinationals companies, as well as to prevent the exploitation of local consumers.[69]

Conclusion

To conclude we can say, it is essential to ensure food security, it is equally significant to safeguard the public interest. Although it is difficult to say that GMOs can contribute to the fight against hunger, poverty, climate change, environmental issues and other global threats. On the other hand, there are unprecedented threats to human health and environment, if proper steps are taken, it change the way things are done. So, Regulations

[66] McGrady B, Ho C S,' Identifying Gaps in International Food Safety Regulation'. (2011)66 Food & Drug LJ, 183.

[67] TAFTA as Monsanto's Plan B: A Backdoor to Genetically Modified Food' (Public Citizen,) <www.citizen.org> accessed 18 April 2016.

[68] Margherita A, 'Spread and Potential Risks of Genetically Modified Organisms.' (2016)8 Agriculture and Agricultural Science Procedia 552.

[69] (n 65)

concerning use of GMOs need a case to case basis for decision to improve customer's perception.[70]

Current trade law does not take social and ethical consumers' concerns in a complete way. In the legal framework, food is considered as a commodity, on the market. The right to food is a basic human right and the government has to protect its people rights to produce and consume food, rather than on the dictates of market and businesses.[71] At present some multi-national companies are attempting to achieve the ability to command what we eat. It is important to develop access to land, strengthen the sustainability of trade laws and reduce the instability of commodity prices for effectively solve the problem of food security for consumer.[72] Finally, it claims that international law is in need of rethinking in relation to GM crops and biosafety. The development and protection of consumer rights mainly depends on the effective enforcement mechanism.

[70] Catherine D C,'Non Solo Cibo, Not Just Food: Which Compatibility between Consumers' Ethical and Social Preoccupations and Trade and Commercial Law?' (2016) 8 Agriculture and Agricultural Science Procedia 270

[71] Costa-Font M and Gil J M Structural equation modelling of consumer acceptance of genetically modified (GM) food in the Mediterranean Europe: a cross country study.' (2009)20 F Q P 399

[72] Margherita (n 68)

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