THE VULNERABILITY OF THE RIGHTS TO HEALTH AND TO ADEQUATE FOOD IN THE CONTEXT OF ARGENTINE AGRO-INDUSTRIAL DEVELOPMENT

INTERFERENCES IN THE CASES OF PESTICIDE USE AND GM-CROPS

LL.M. María Cristina Alé

e-Der ediciones de Derecho
qellqasqa editorial

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Dubai Declaration on International Chemicals and the Overarching Policy Strategy

IBRD Articles of Agreement (Art.4 Section 10)

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International Convention for the Protection of New Varieties of Plants

International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families(ICRMW)

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LIST OF ABBREVIATIONS

AASP	Agrifood and Agribusiness Strategic Plan 2010-2020
ACHPR	African Charter on Human and Peoples' Rights
AGN	National General Auditor's Office
ANMAT	National Administration of Medicines, Food and Technology
CEDAW	Convention on the Elimination of All Forms of Discrimination against Women
CERD	International Convention on the Elimination of All Forms of Racial Discrimination
CONICET	National Council of Scientific and Technical Research
CRC	Convention on the Rights of the Child
CRPD	Convention on the Rights of Persons with Disabilities
DIRABIO	Direction of Agrochemicals and Biology
DNAPVyA	National Direction of Agrochemicals, Veterinarian Products and Food
EFSA	European Food Safety Authority
ESCRs	Economic, Social and Cultural Rights
EU	European Union
FAO	Food Agricultural Organization
GC	General Comment
GM	Genetically Modified
GMOs	Genetically Modified Organisms
GR	Green Revolution
HR	Human Right
HRs	Human Rights
IACHR	Inter-American Convention on Human Rights
IARC	International Agency for Research of Cancer
ICCPR	International Covenant on Civil and Political Rights
ICESCR	International Covenant on Economic, Social and Political Rights

ICRMW	International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families
INTA	National Agricultural National Technology Institute
MRLs	Maximum Residues Limits
NC	National Constitution of the Argentine Republic
NCAR	National Commission on Agrochemicals Research
SAGyP	Secretary of Agriculture, Livestock and Fishing
SENASA	National Service of Health and Agri-Food Quality
SICOFHOR	System of Control of Fresh Fruits and Vegetables
SR	Special Rapporteur
UDHR	Universal Declaration of Human Rights
WB	World Bank
WHO	World Health Organization

INTRODUCTION

Over the last decades the use of agrochemicals –pesticides and fertilizers– has grown exponentially worldwide. The non-profit organization *Pesticide Action Network* has estimated that short- and long-term pesticide exposure currently affects a range between 1 million and 41 million of people annually[1]. In Argentina, for example, the use of Glyphosate increased from 3 liters per hectare in 1999 to 13.5 liters in 2008[2]. One of the main explanatory factors for such drastic increase is the intensive production of transgenic crops. The production of transgenic soya in Argentina increased by 1000 % between 1970 and 2008[3], as a result of the so-called "green revolution". In the case of fertilizers, even though their use has often meant a solution for renovating, recovering and preservation of soils in the intensive and extensive crops production (as pesticides have been to weeds and pests control), the problem arises with their intensive, extensive, indiscriminate, deregulated, and uncontrolled use. While the harvest per hectare increased 30% between 1991-2010, the use of agrochemicals increased 858%[4]. This gives a measure of the

1 Pesticide Action Network, response to the questionnaire on pesticides and the right to food, pp. 3-4. Available at: www.ohchr.org/EN/Issues/Environment/ ToxicWastes/Pages/Pesticidesrighttofood.aspx.

2 Cámara de sanidad Agropecuaria y Fertilizantes (CASAFE)-Argentina.

3 Cámara de Sanidad Agropecuaria de Fertilizantes (CASAFE), La Argentina 2050- La Revolución Tecnológica Del Agro. Hacia El Desarrollo Integral de Nuestra Sociedad, 2009. p.490.

4 Red Universitaria de Ambiente y Salud /Red de Médicos de pueblos Fumigados (2013) The

exponential growth in the intensity of agrochemicals deployment over the last two decades.

In recent years, several scientific studies have indicated that specific pesticides (or combinations thereof) would be causing serious damages to human and animal health, as well as to the environment. The World Health Organization (WHO) estimated that pesticide-poisoning affects 3 million people a year, resulting in around 20,000 unintentional deaths, 99% of which occur in developing countries[5].

All of the above point to the conclusion that human health is being severally affected through an indiscriminate and abusive use of agrochemicals. Health is a human right (HR) with legal foundation in international and regional treaties. As a corollary, State parties have the obligation to respect, protect and fulfill the right to health of all the people under their jurisdictions. Nation-States –making use of their sovereignty or delegating part of their functions to supranational bodies such as the European Union (EU)– legislate the use of agrochemicals in divergent ways, granting protection to diverse interests, to variable extent. Specific priorities are decided according to the hierarchy and valuation of the protected assets at stake, as well as the guiding principles of

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use of toxic agrochemicals in Argentina is continuously increasing Analysis of data from the pesticide market in Argentina Available at: www.reduas.fcm.unc.edu.ar

5 Ad Hoc Monitoring Report Claims of (non-)adherence by Bayer CropScience and Syngenta to the Code of Conduct Provisions on Labeling, Personal Protective Equipment, Training, and Monitoring Presented before the FAO/WHO Panel of Experts on Pesticide Management by the European Center of Constitutional Law and Others," October 1, 2015.
Available at: http://www.ecchr.eu/en/our_work/business-and-human-rights/pesticides/q-a-pesticides-monitoring-report-to-fao.html

the legal system, in general, as well as of particular legal fields.

Furthermore, given that the diverse human rights are interconnected and interrelated, and particularly because the right to health is a fundamental HR, it is thus essential for the realization of other human rights[6]. In turn, some other rights are indispensable for the realization of health. This is the case of the right to adequate food, which would also be adversely compromised by the use of pesticides in agriculture at an industrial scale, as will be argued here, as well as by the mainstreaming of genetically modified organisms (GMOs) in food production. Furthermore, the case will be made that a whole range of other HRs are potentially affected, as well: the right to life, to safe water and adequate sanitation, to a healthy environment, to information, to participation of people in the decision-makers process, among others.

Argentina has always been an agricultural and livestock-producing country. Nonetheless, as part of the global economic developments in the last three decades of the 20th Century, this production has become heavily industrialized. This makes a critical analysis of the legal and factual situation regarding the use and control of agrochemicals a vital matter. There are two relevant dimensions, in this regard: On the one hand, the direct exposure of the population to fumigations with agrochemicals in the adjacencies of rural homes and schools, and, on the other hand, the indirect exposure of the entire population through the consumption of genetically modified food containing agrochemical residues.

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6 UN Committee on Economic, Social and Cultural Rights (CESCR), "General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12 of the Covenant)" (E/C.12/2000/4, August 11, 2000). Paragraph 1.

This book is thus be divided in 3 parts. The first part outlines the factual state of the art concerning agrochemicals –in particular pesticides– and the GM crops. This includes the historical circumstances of their exponential growth over the last decades, along with scientific findings and the regulatory framework of particular countries, with focus on Argentina. For this purpose, three of the most widely used and controverted pesticides are taken to illustrate the implications on human health.

The second part explores the alleged breaching of HRs through GM crop production and the use of pesticides. Part 2 shall be divided into three chapters. Chapter 3 presents the legal and institutional framework of Argentina regarding agrochemicals and GMOs. The next two chapters address the interface of this framework with the human rights at stake: Chapter 4 deals with the right to health and the right to adequate food as core allegedly violated HRs, and because of their tight mutual imbrication. Chapter 5 then goes on to outline other HRs allegedly affected in their full realization.

The third part analyzes the obligations of the Argentine State in guaranteeing the full realization of the HRs of its population. Chapter 6 starts by outlining the general framework of agricultural public policies, and goes on articulating the obligations in general, and the tripartite dimensions of States obligations: to respect, protect, and fulfill. Chapter 7 details the particularities under the right to health and the right to food and how the State deals with them.

The purpose of this work is to open a debate around this grave problem –which encompasses a wide range of issues and HRs dimensions– and open ways for further investigation and eventually serve as a first basis for legal actions. This investiga-

tion also confirms the hypothesis that the use of pesticides and GM-crop production infringe the right to health and the right to adequate food insofar threatening food security as well as the quality of the environment and other rights. The case study –Argentina– was chosen because of the great expansion of GM crops it has witnessed –the third largest one worldwide, after the USA and Brazil– and the subsequent rise in the use of pesticides. The main source of legal research was the International Covenant on Economic, Social and Cultural Rights (ICESCR) and the authority of its Committee, even when the vast corpus of international and regional law was also taken into consideration.

PART I: FACTUAL AND NORMATIVE BASES OF THE CONTEMPORARY TRANSFORMATION OF AGRICULTURE

1) DINAMIC ANALYSIS: THE EVOLUTION OF AGRICULTURE. THE GREEN REVOLUTION

1. The beginning

After the Second World War, the world took a new direction leaded by the victors inaugurating new avenues for capitalist expansion. The changes of paradigms affected not only the political and economic aspects of the public sphere, but also the private economies of other actors in non-developed countries.

The iInternational capital expanded to industries traditionally not related to transnational companies, like agriculture and the food industry. In addition, the reinforced orientation of Latin-American economies to the export of raw materials to foreign countries in response to a growing demand, were key factors that contributed to this change[7].

In this context, the so-called green revolution (GR) was born. The term was first used in the United States by William Gaud[8] –

7 Segrelles Serrano, J.A., El Problema de Los Cultivos Transgénicos En América Latina: Una Nueva Revolución Verde., Entorno Geográfico No.3 (Cali, Colombia: Departamento de Geografía, Universidad del Valle, 2005).-pp. 93-120.

8 He affirmed that "these and other developments in the field of agriculture contain the makings of a new revolution. It is not a violent Red Revolution like that of the Soviets revolution, nor is it a White Revolution like that of the Shah of Iran. I call it the Green Revolution...This new revolution

director of the International Agency of the United States for International Development– to describe a process of transformation in Asian agriculture, under the tutelage of Norman Borlaug[9], who is considered one of the fathers of the GR. The population had grown enormously in countries like India and Pakistan during the sixties, and the subsequent lack of food had caused worldwide concern. In this context, some scientists –included Borlaug– were called upon by the United States to take part in the Program "Food for Peace" in order to address this problem. Meanwhile, the Rockefeller Foundation had created the International Maize and Wheat Improvement Center in Mexico, where different countries sent specialists to learn about new seed technologies. Wheat and maize were the first crops to be sent to South Asia, followed by rice. This was the beginning of a "revolution" which, with the initial purpose of stopping starvation and benefitting rural communities where subsistence farming prevailed, marked the dawn of the era of industrialized agriculture.

The new agricultural developments soon expanded to other states[10].Countries like the Philippines, Japan, and Thailand started

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can be as significant and as beneficial to mankind as the industrial revolution of a century and a half ago" in Gaud, W., "The Current Effect of the American Aid Program," The Annals of the American Academy, 384, 1969.pp. 73-84..

9 Norman Borlaug worked as a scientist in Mexico, specifically in the "International Wheat Improvement Program" at El Batán, He combined different species of seeds creating hybrids of wheat and rice. During the fifties he developed more than thirty-five varieties of those grains improving the agricultural yield as never before in Mexico, as a consequence of which Mexico became an export country. In 1970 he received the Nobel Peace Prize.

10 Woodward, B. Shurkin, Joel N. and Gordon, Debra L., Scientists Greater Than Einstein: The Biggest Lifesavers of the Twentieth Century (Quill Driver Books, 2009).) Chapter 5.

to use those hybrid seeds, incrementing the cultivated area and tripling their crops[11]. China followed the same path during the eighties[12].

The following table shows the changes in factors of productions in Asia from 1961 till 2000. The most impressive point is the increase in the use of fertilizers –from 2 to 70 million tons–.

Table 1. Green Revolution: Changes in Factors of Production in Developing Countries of Asia

	Adoption of Modern varieties					
	Wheat	Rice	Irrigation	Fertilizer Nutrient Use	Tractors	Cereal Production
	Mha / %area		million ha	million t	millions	million t
1961	0 / 0%	0 / 0%	87	2	0.2	309
1970	14 / 20%	15 / 20%	106	10	0.5	463
1980	39 / 49%	55 / 43%	129	29	2.0	618
1990	60 / 70%	85 / 65%	158	54	3.4	858
2000	70 / 84%	100 / 74%	175	70	4.8	962

Source: FAOSTAT, July 2002 and author's estimated on modern variety adoption, based on CIMMYT and IRRI data.

Source: FAO[13]

2. Implications

Technically, the GR was a process which applied science and technical advances to agriculture. Yet this implied a deep

11 Flores, Edmundo, Tratado de Economía Agrícola *(México: Fondo de la Cultura Económica, 1961)*. pp. 54.

12 Norman E. Borlaug, "Feeding A World of 10 Billion People: Our 21st Century Challenge," in Perspectives in World Food and Agriculture 2004, ed. Colin G. Scanes and John A. Miranowski *(Ames, Iowa, USA: Iowa State Press, 2008)*, 31–56.

13 More information at: FAO-CFS:2004/INF/11 Conferencia de una personalidad eminente sobre la seguridad alimentaria: "La revolución verde: un programa inconcluso" *(2004)* (Comité de Seguridad alimentaria mundial/30º período de sesiones).

transformation in the way of doing agriculture: it meant moving from traditional to industrialized farming –modern agriculture–. Traditional agriculture is based on extensive methods of sowing, small and medium scale production –usually polycultures of local products to satisfy local markets–, making use of the crops rotation and respecting biological cycles. Industrialized agriculture, on the other hand,, relies on intensive, large-scale production, usually monocultures with the purpose of satisfying the growing demand of the international market. It is technology-intensive, with widespread use of agrochemicals, and driven by a business-logic[14]. As Borlaug himself and his college Dowswell affirmed, agricultural intensification brings problems to the environment, such as local pollution caused by the use of agrochemicals, salinization of irrigation systems, as well as the erosion of soils, the extinction of some animal species, and the loss of forest and the subsequent effects on biodiversity[15].

3. The green revolution in Latin-America

The GR arrived in Latin-America hand-in-hand with some transnational institutions. The Rockefeller Foundation supported the creation of the "Center of Studies in Agricultural Research" –first with the creation of the Agronomic Program of Mexico (PAM), then converted to the International Center for the

14 Segrelles Serrano, J.A., El Problema de Los Cultivos Transgénicos En América Latina: Una Nueva Revolución Verde.

15 Borlaug, Norman E. and Dowswell, Christopher R. *(2004)* Prospects for World Agriculture, in the Twenty-First Century in Sustainable Agriculture and the International Rice-Wheat System" pp 1-18. In Rattan Lal, ed., Sustainable Agriculture and the International Rice-Wheat System, Books in Soil, Plants, and the Environment *(*New York: Marcel Dekker, 2004*)*.

Improvement of Maize and Wheat (CIMMYTI) in 1963–[16]. After its successful experience in Mexico, the Rockefeller Foundation invested in other countries with similar programs: first Colombia, then Ecuador and Chile. The Foundation also funded scholarships and educational programs in science whose beneficiaries were people from Honduras, Brazil, Peru, Uruguay, Bolivia and Costa Rica[17].

Moreover, together with the Ford Foundation, the Rockefeller Foundation[18] advocated for the diffusion of those modern seed-technologies and associated practices throughout Latin America and the rest of the world via the creation of the Consultative Group on International Agricultural Research (CGIAR)[19] in 1971, also supported by the World Bank (WB) and the Food and Agriculture Organization (FAO). With the purpose of "reducing poverty and hunger, improve human health and nutrition, and enhance ecosystem resilience through high-quality international agricultural research, partnership and leadership"[20], the group

16 Vásquez Sánchez, J., Geografía Rural Y La Agricultura (Cali-Colombia: Universidad del Valle, 2000).

17 Picado Umaña, Wilson, "Conexiones de La Revolución Verde Estado Y Cambio Tecnológico En La Agricultura de Costa Rica Durante El Período 1940-1980" (Tesis Doctoral, Universidad de Santiago de Compostela Facultad de Xeografía e Historia Departamento de Historia Contemporánea e de América, 2012). pp. 175-184.

18 This was after the creation of the International Rice Research Institute(IRRI) in the Philippines

19 Ceccon, E., La Revolución Verde: Tragedia En Dos Actos, vol. 1, Revista Ciencias 91 (México: Universidad Nacional Autónoma de México, 2008). pp. 21-29.

20 CGIAR Principles on the Management of Intellectual Assets ("CGIAR IA Principles") (effective as part of the Common Operational Framework as of 7 March 2012; approved by the Consortium Board on 1 March 2012 and by the Fund Council on 7 March 2012).

created specialized agencies in Asia, Africa and Latin-America –each one with a focus on different and specific products–[21].

4. The green revolution in Argentina: evolution

The GR arrived in Argentina during the 70's. The Mexican wheat seeds began to be used in crops in the Pampean region, where the traditional method of farmers had been to alternate livestock with agriculture. The introduction of this seed, together with other cereal varieties, oilseeds, as well as soya beans, allowed for the use of the "double harvest" with a crop rotation wheat-soya, and in such way the livestock suffered a displacement. The country gradually turned from a reputed livestock country[22] into an agricultural country. The production of soya increased 1000 percent between the years 1970 and 2008, from 50 thousand to 50 million tons[23].

As a result of high international demand, low cost of production and the high profitability, soya crops eventually started to replace other varieties, expanding well beyond the Pampean region. Most of the territory of the Argentine North-East Region is nowadays covered with soya crops.

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21 In Latin-America, apart from the CIMMYTI, the International Center for Tropical Agriculture (CIAT) was founded in 1968 in Cali, Colombia; and the International Potato Center (CIP) was established in 1971 in Lima, Peru. Currently, they are part of a Consortium of the 15 specialized agencies under the umbrella of CGIAR, sharing a common agenda.

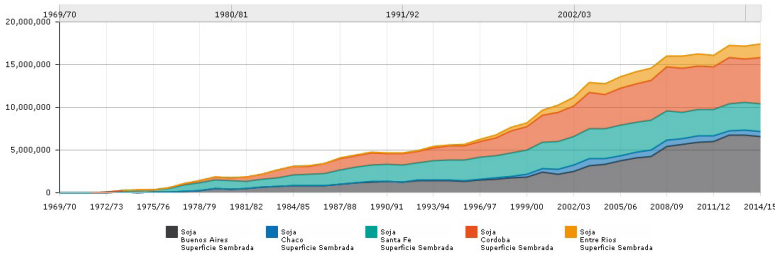
22 Cámara de Sanidad Agropecuaria t Fertilizantes (CASAFE), La Argentina 2050- La Revolución Tecnológica Del Agro. Hacia El Desarrollo Integral de Nuestra Sociedad. Chapter II.

23 Ibid. p. 490.

The following graph depicts how the area sown with soya has grown from 1971 till 2010[24].

Source: CONICET[25]

The next graph shows the colonization of land by soya beans in the following provinces: Buenos Aires, Chaco, Santa Fe, Córdoba and Entre Rios.



Source: SIIA (MAGyP)[26]

The most significant developments took place during the decade of the 1990s. Neoliberal market aperture meant the potentiation of the agroindustrial model. In 1996, a particular type of soya bean came to the Argentinian market through the hands of a big company: Monsanto. This specific seed –the soya 40-3-2,

24 More information may be found at:
http://www.imhicihu-conicet.gob.ar/ARGENTINAenMAPAS/caste/cu_ol_soja.htm

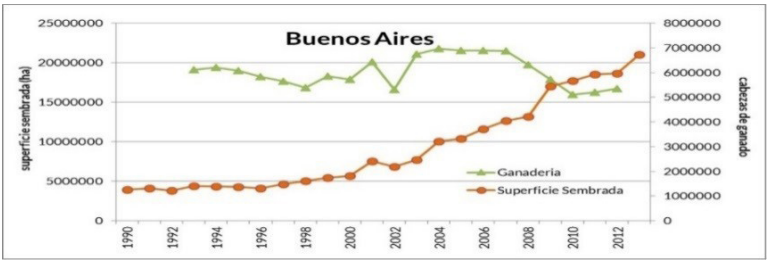
25 CONICET Consejo Nacional de Investigaciones Científicas y Técnicas(Argentina) Available at:www.conicet.gov.ar

26 See at: http://www.siia.gov.ar/_apps/siia/estimaciones/estima2.php

also called RR Soybean– has the particularity of being glyphosate-resistant (a potent herbicide). The Secretary of Agriculture, Livestock, Fishing and Food (SAGPyA), under Resolution nº167, authorized this new variety[27]. In the first instance, Monsanto negotiated the entrance of those seeds with local firms, such as Asgrow, Nidera o Syngenta. This helped the seed to expand across the territory, and also to neighboring countries like Paraguay, Bolivia and Brazil. (See Annex 2)

From that moment on, the cultivation of soybean increased exponentially, displacing not only livestock, but also extensive crops like wheat and intensive crops such as fruits and other vegetables.

For example, during the last decade in Buenos Aires the area sown with soya increased while the opposite occurred with livestock.

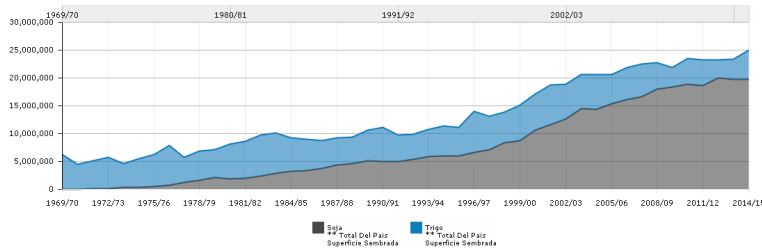


Source: OSAS28

Other crops also followed the same pattern of soya, but to a lesser extent, such as the case of wheat.

27 SAGPyA Resolution nº167/96 (Buenos Aires, Argentina) 25 March 1996.

28 Observatorio Socio-ambiental de la soja. Available at: www.observatoriosoja.org



Source: SIIA (MAGyP)[29]

The choice to cultivate only a few types of crops generates another problematic situation: the emergence of monocultures. This phenomenon is accompanied by the increased use of agrochemicals as well as by the spread of a system of direct sowing. These issues are addressed in the next section.

2) STATIC ANALISYS: THE THREE PILLARS OF AGROINDUSTRY

1. PILLAR ONE: The new methods of agricultural work

a. Monoculture

Unlike polyculture, which is based on mixed crops or on rotation between crops and livestock, monoculture occurs when the same type of cultivation is planted repeatedly over the years in the same soil or field. The lack of rotation creates an environmental imbalance that causes the soil to reduce its fertility due to loss of nutrients, erosion, and weeds. The larger the scale of monocultural crops, the more pervasive these effects. Besides, a proper rotation of crops is important to combat pests

29 For more information, visit the official page: www.siia.gov.ar

and diseases –a natural process that it is undermined in mono-cropping. To deal with these inconveniences, the agrochemical industry created fertilizers – that is, chemicals which supply elements to the soil in order to replace the lost nutrients or improve their performance in terms of absorption, facilitating a faster growth and development–, and pesticides which serve to destroy, prevent, repel, or mitigate any plague, including unwanted species of plants or animals.

These interventions have a direct impact on bio-diversity, including not only the variety of plants and animals, but also micro-organisms and genetic diversity inside each species[30]. The global acknowledgement that "biological diversity is being significantly reduced by certain human activities"[31] led to the adoption of a multilateral treaty with the objectives of "the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources"[32]. On May 22nd 1992 at the Nairobi Conference, the Convention on Biological Diversity was born and entered into force in December 1993. Argentina signed it on 12 June 1992 and ratified it on 20 February 1995.

b. Direct sowing

The new developments in industrial agriculture also rely on a specific sowing-technique: the method of no-till or direct sowing. This method is mainly used when agriculture is

30 Secretariat of the Convention on Biological Diversity Sustaining life on Earth How the Convention on Biological Diversity promotes nature and human well-being. *(2000)* Page 2.

31 "Convention on Biological Diversity" *([1993]* ATS 32 / 1760 UNTS 79 / 31 ILM 818 *(1992), 1992)*. Preamble.

32 Ibid. Art.1.

intensified. It is also called conservation tillage, and refers to the practice of working the soils without ploughing them up. The FAO recommends this practice because it increases the retention of organic material as well as its nutrients and decreases the amount of water used to cultivate, among other benefits.

Beyond the advantages of this technique, most experts recommend crop rotation in any case, to avoid soil-erosion and maintain bio-diversity. Failing to do so will lead to an excessive use of fertilizers and pesticides. It is also necessary "because improving the balance of nutrients and organic matter in the soil, the water use and it has an inhibitory effect on various pathogens (pests, weeds and diseases)"[33].

Additionally, the lack of plowing – which is an effective tool in the elimination of weeds –, likewise leads to relying on increased use of herbicides. Extra nitrogen inputs are also required, which are supplied through fertilizers, leading to an excessive, indiscriminate use that is radically distorting bio-geochemical cycles. But even this excessive amount of fertilizers is not enough to replace the loss of nutrients: in the case of Argentina, for example "out of 4 tons of nutrients lost each year, only 1.4 tons are compensated though fertilizers" [34].

33 Castilla, F., "Siembra Directa: La Elegida Para Conservar El Suelo.," Revista de Investigaciones Agropecuarias-Buenos Aires/Argentina 39, no. 2 (2013): 118–23. p. 121.

34 Ibid.

2. PILLAR TWO: The technological base: Genetically Modified Organisms (GMOs)

Biotechnology is defined in the Convention on Biological Diversity as "any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use"[35]. The concept of biosecurity emerged to counterbalance the blustering pace of development of biotechnology. It focuses on keeping practices safe with the purpose of guaranteeing human, animal and environmental security[36].

In agriculture, biotechnology is used with several products, especially soya, maize, potato, canola, tomato, pumpkin, cotton and papaya. A specific gene which is present in a given organism is isolated through genetic engineering and then inserted into another living being of a different species. The resulting organism is called GMO or transgenic organism[37]. Such trans-genetic alterations can give way to various artificial and natural developments. New varieties of the same plant can branch from the genetically altered organism, be it through laboratory manipulation

35 "Convention on Biological Diversity." Art 2. Even though it has been used since ancient times as a traditional method to improve food, crops and animals, nowadays the modern biotechnology uses in addition, modern technologies applying DNA in order to produce a modification of a seed from its original characteristics.

36 Consejo para la información sobre Seguridad de Alimentos y Nutrición. Bioseguridad de los cultivos transgénicos y sus derivados. Criterios para la evaluación de riesgo.

Available at: http://www.cisan.org.ar/articulo_ampliado.php?id=26&hash=7f147789491211232fb84e03b357b6e1 [Last entered 25/11/2015-16:48].

37 Casal, Ignacio y otros (2000) La Biotecnología aplicada a la Agricultura, (Ed. eumedia, Madrid), pag. 19.

or through pollination of other crops in a field[38]. The use of this technique has the main purpose of increasing crop production, as well as its resistance to plagues and diseases[39].

a. Controversies around GMOs

The controversies generated by this practice revolve around the uncertainties and the ensuing lack of control over the evolution of the resulting GMOs, which could potentially affect human health and the environment. As Spendeler has expressed:

> "... the reality is much more complex and remains much more to discover before having a deep understanding of how work the genetics operation in the living beings. For example, the interconnection between genes or the influence of the environment in which the organisms live, seen to be fundamental in the performance of genes. Therefore, the current level of knowledge does not allow to foresee all the effects of the insertion of a foreign DNA gene of an organism. Hence the high probability of occurrence unforeseen and unwanted effects as well as the genetic instability in genetically modified organisms..."[40].

The primary concerns regarding GMOs and their potential impact on human health when consumed can be categorized into

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38 Jorge Kaczewer and Tomás Lambré, La amenaza transgénica, 1. ed., Bolsillo Divulgación (Buenos Aires: Ed. del Nuevo Extremo, 2009). pp. 29.

39 World Health Organization and Zoonoses and Foodborne Diseases Department of Food Safety, Modern Food Technology, Human Health and Development an Evidence-Based Study (Geneva: WHO, 2005). Page 4.

40 Spendeler, L., "Organismos Modificados Genéticamente: Una Nueva Amenaza Para La Seguridad Alimentaria.," Rev. Esp. Salud Publica 79, no. 2 (2005): 271–82. Pages 272-273.

three main areas: allergenicity, gene transfer (with a particular emphasis on antibiotic-resistant genes), and genetic outcrossing. Furthermore, several studies contradict the notion of predictability, with emerging scientific research suggesting contrary findings, such as links to liver and kidney issues, among other health concerns[41].

b. General Regulations

States as well as intergovernmental organizations around the world have regulated GMOs to a greater or lesser extent. The Joint FAO/WHO Codex Alimentarius Commission adopted the Codex Alimentarius[42], which regulates food standards and issues recommendations, including all principles relating to health and GMOs. Even though these principles are not legally binding to States, they expressly refer to the Agreement on the Application of Sanitary and Phytosanitary Measures of the World Trade Organization[43], and its members are encouraged to adjust their national canons to the Codex guidelines[44].

On 29 January 2000, the Cartagena Protocol on Biosafety to the Convention on Biological Diversity[45] was adopted in Montreal.

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41 Gilles-Eric Séralini et al., "Genetically Modified Crops Safety Assessments: Present Limits and Possible Improvements," Environmental Sciences Europe 23, no. 1 (2011): 1–10, doi:10.1186/2190-4715-23-10.

42 Joint FAO/WHO Codex Alimentarius Commission., "Codex Alimentarius" (Rome: Food and Agriculture Organization of the United Nations, 1992).

43 UN General Assembly, "Agreement on the Application of Sanitary and Phytosanitary Measures, 1867 U.N.T.S. 493" (A/RES/61/106, January 24, 2007).

44 WHO (2014) Frequently asked questions on genetically modified food.

45 "Cartagena Protocol on Biosafety to the Convention on Biological Diversity" (United Nations, Treaty Series, vol. 2226, p. 208, n.d.).

It aims to:

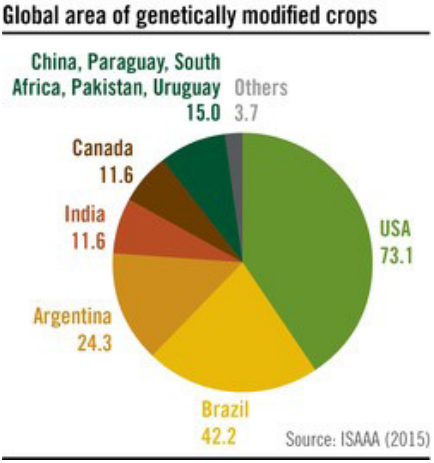
> "... contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health, and specifically focusing on trans boundary movements[...],[...]in accordance with the precautionary approach contained in Principle 15 of the Rio Declaration on Environment and Development"[46].

Even though the text is clear in establishing its goals and priorities, opposed positions arose during the approval of the text. On one hand, the EU led a group of 132 countries which argued in favor of a balance between commercial interests and the prevalence of the precautionary principle regarding environmental and human health issues, while on the other extreme, the so-called Miami Group, comprising six countries –USA, Canada, Australia, Chile, Uruguay and Argentina– explicitly prioritized commercial interests, proposing to exclude agricultural commodities and their derivate products from the Protocol. These latter states hold the biggest share in the global GMOs-market. In the end, the USA –who lead the production of GMOs–, Canada, and Australia did not sign the Protocol, and neither Argentina nor Chile ratified the protocol. The exception was Uruguay, who ratified it during the Mujica administration.

The picture below depicts the extension of the area globally

46 Ibid. Art. 1.

cultivated with GM crops, Argentina being the 3rd country in the world with the greatest planted surface after Brazil and the USA.



Source[47]

c. The GMOs within the European Union

The EU –which adopted the Cartagena Protocol as part of its legislation[48]–has an extensive legal framework referring both to GMOs for cultivation and to food originating in transgenic products. The base and aim of this legal framework is the protection of human and animal health, as well as the environment. The precautionary principle is at its core in all stages, as reflected in industrial practices such as labelling and guaranteeing the traceability of GMOs into the market.

Furthermore, all the procedures established in EU directives

47 Available at: http://www.globalagriculture.org/typo3temp/pics/29a734a848.jpg

48 Directive 2001/18/EC, Art. 32 inc. 1.

and regulations suffered a modification in 201549. Before the directive 2015/42 which amended the 2001/18/EC, the European Member States had the obligation to tolerate the authorization for cultivating in their territories as given by supranational European Authorities5051. After the amending directive, Member States are allowed to restrict or prohibit the cultivation of GMOs, even without the existence of scientific evidence to justify it. The new text makes it possible to ban any variety approved at EU-level, which has passed the European Food Safety Authority's (EFSA) scientific safety controls, when alleging political and

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49 The main legal framework is given by the following normative, beyond there are other rules that complement, supplement or rule them: Directive 2001/18/EC on the deliberate release of GMOs into the environment. Regulation (EC) 1829/2003 on genetically modified food and feed. Directive (EU) 2015/412 amending Directive 2001/18/EC as regards the possibility for the Member States to restrict or prohibit the cultivation of GMOs in their territory. Regulation (EC) 1830/2003 concerning the traceability and labelling of genetically modified organisms and the traceability of food and feed products produced from genetically modified organisms. Directive 2009/41/EC on contained use of genetically modified micro-organisms. Regulation (EC) 1946/2003 on trans boundary movements of GMOs.

Available at: http://ec.europa.eu/food/plant/gmo/legislation/index_en.htm

50 Except for specific motives "...under certain well-defined conditions, the use of a variety in all or in part of their territory or to lay down appropriate conditions for the cultivation of a variety..."Directive (EU) 2015/412, paragraph 4.

51 See: Directive (EU) 2015/412, paragraph 5 With this regard: "once a GMO [was] authorized for cultivation purposes in accordance with the Union legal framework on GMOs and complies, as regards the variety that is to be placed on the market, with the requirements of Union law on the marketing of seed and plant propagating material, Member States [were] not authorized to prohibit, restrict, or impede its free circulation within their territory, except under the conditions defined by Union law".

environmental motives or agricultural policy objectives, or other such as town and country planning, land use, socio-economic impacts, coexistence and public policy[52].

d. GMOs in Argentina

Argentina, as mentioned above, did not ratify the Cartagena Protocol. This means that the State is not obliged to follow this norm in order to establish a national legal framework in this subject-matter. Generally speaking, neither the precautionary principle nor human and animal health are present in the core legislation. This means that none of the different departments of the State have the legal obligation to align with the precautionary principle. However, the production of certain crops[53]is banned or restricted in some places at municipal level[54]. This overarching framework makes up the starting point for the problematization attempted in this piece of research, as developed in the following chapters.

3. PILLAR THREE: Soils and plague control: Agrochemicals

a. General Features

Agrochemicals –which include fertilizers and pesticides– have reached their maximum apogee with the cultivation of GMs crops. Although they were already being used before the Green Revolution, the span and scale of current use has no historical precedent. Agrochemicals are generally used in crops, from the pre-sowing and pre-germination phases to post-germination. They

52 Ibíd., paragraph 13.

53 El Bolsón, Bariloche-Rio Negro. Resolution: 262/04.

54 Bordenave, Sofía A. s/Mandamus (No.18.726/03)-Superior Tribunal de Justicia-Río Negro (17 March 2005).

also can be selective or non-selective, contact-type or systemic. Agrochemicals are selective or non-selective according to their total or partial action in removing other vegetal species; and contact-type or systemic, depending on which part of the plant is affected during treatment – whether only its surface, or the crop is impregnated with the substance through absorption and spreading through its sap.

Pesticides, on the other hand, can be categorized depending of the purpose of their use: herbicides, fungicides, insecticides, acaricides, nematicides and worming. Depending on their chemical composition they can be also classified in: organochlorines, organophosphates, carbamates, formamidines, thiocyanates, organotin, dinitrophenols, synthetic pyrethroids and antibiotics[55].

In the case of pesticides, the methods of application on crops can be aerial, broadcast, spot, or spraying. They may permeate human and animal bodies by inhalation, ingestion and/or skin absorption.

b. General international regulations

A distinction can be made between legally binding and non-binding regulations. Non-binding regulations can be summarized in the following:

In 1985 the FAO incorporated the International Code of Conduct on Pesticide Management into its legal framework, which provides guidelines to companies and to governments regarding the adequate use of pesticides. This code is also supported by the WHO.

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55 Govinda Bhandari, "An Overview of Agrochemicals and Their Effects on Environment in Nepal," Applied Ecology and Environmental Sciences 2, no. 2 (March 25, 2014): 66–73, doi:10.12691/aees-2-2-5.

The Strategic Approach to International Chemicals Management[56], adopted in Dubai in 2006 by the International Conference on Chemicals Management makes references to the protections of human rights. Some Conventions taken by the International Labor Organization on the protection of agricultural workers expressly refers to the need to establish safeguards against pesticides[57]. The Responsible Care Global Charter[58] is an initiative by the chemical industry itself, self-imposing minimal standards for the use of agrochemicals.

On the other hand, and even though the international regime for hazardous pesticides does not present an effective legally binding framework to regulate pesticides throughout their life cycle – from the registration to the withdrawal and disposal -, few attempts to limit their impact do exist:

On May 22nd of 2001, a Covenant which rules persistent organic toxic substances was signed in Stockholm: the Stockholm Convention on Persistent Organic Pollutants, which entered into force on May 17th 2004 and up to this date counts 179 State parties[59].

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56 See: http://www.saicm.org/

57 See for example, Articles 12 and 13 of the C184 - Safety and Health in Agriculture Convention, 2001 (No. 184).

Convention concerning Safety and Health in Agriculture (Entry into force: 20 Sep 2003) Adoption: Geneva, 89th ILC session (21 Jun 2001).

58 See: http://www.cefic.org/Responsible-Care/

59 "Stockholm Convention"-Stockholm Convention on Persistent Organic Pollutants- United Nations -Treaty Series, vol. 2256, p. 119.

Argentina is part of the convention[60], but with the reservation that any amendment to Annex A, B, or C [where each substance is listed] shall enter into force for Argentina only after it has deposited its instrument of ratification, acceptance, approval, or accession with respect thereto.

The already mentioned Convention on Biological Diversity, which Argentina signed on 12th June 1992, entered into force in December 1993 and was ratified on 20th February 1995 (see 2.1.a).

Regarding international trade activities, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade[61] and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal[62] have been agreed upon. The first one enables sharing of information between States on the export and import of certain hazardous pesticides, and the second one regulates the international trade of hazardous pesticides as waste.

In addition, the Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters[63] has implications in the regulation of agrochemicals in Europe and Central Asia. This was

60 Signed on 23 May 2001 and ratified on 25 January 2005 by law 26.011.

61 Argentina signed it on 11 Sep 1998 and ratified on 11 June 2004.

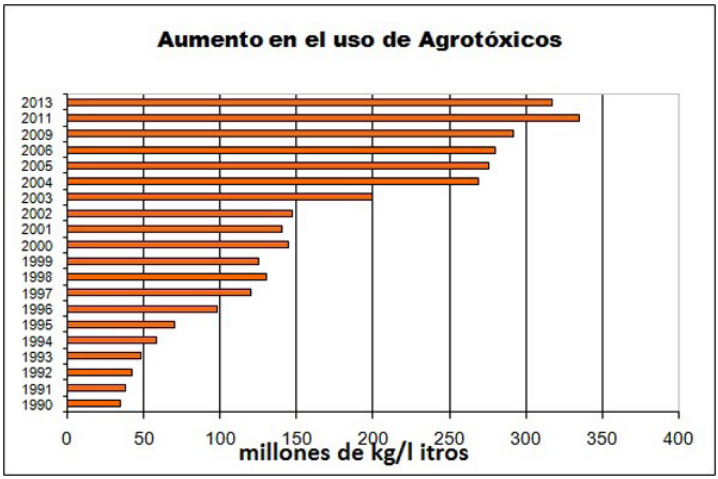
62 Argentina signed it on 28 June 1989 and ratified on 27 June 1991.

63 The United Nations Economic Commission for Europe (UNECE) Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters was adopted on 25 June 1998 in the Danish city of Aarhus (Århus) at the Fourth Ministerial Conference as part of the "Environment for Europe" process. It entered into force on 30 October 2001.

demonstrated in a case before the European Court of Justice, which established that the information about pesticides and other substances must never yield to the principle of confidentiality[64].

c. The use of agrochemicals in Argentina in brief

The use of agrochemicals in Argentina has increased exponentially over the last decades, as the following graph shows.



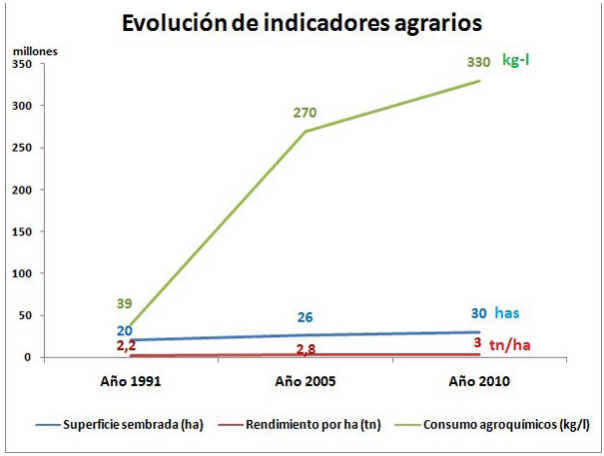
Source: CASAFE/REDUAS[65]

In 1991, the density of plantations per hectare was 2.2 tons, reaching 3 tons per hectare by 2010, thus amounting to a 30% increase in average yields. However, increase in the consumption of agrochemicals does not correlate with the growth of cultivation area: it grew by 858% over the last years[66].

64 Case C-673/13 P, Commission v. Stichting Greenpeace Nederland and Pesticide Action Network Europe, judgment of 23 November 2016.

65 Available at: www.argenpress.info

66 "The use of toxic agrochemicals in Argentina is continuously increasing- Analysis of data from



Source[67]

In Argentina, the yearly 315 million liters of agrochemicals used represent 8 liters per inhabitant[68].

d. Particular Pesticides

In this section three particular pesticides will be analyzed, which are considered some of the most controverted because of their adverse effects on human health, and their extended use all over the world, but particularly in Argentina (see Annex 1).

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the pesticide market in Argentina" Red universitaria de ambiente y salud /Red de Médicos de pueblos Fumigados-(10 dic 2013). Available at: http://www.reduas.com.ar/the-use-of-toxic-agrochemicals-in-argentina-is-continuously-increasing/

67 Available at: http://ecoscordoba.com.ar/wp-content/uploads/2013/06/evolucion-agtotox-has-sembradas-y-rendimiento.jpg [Last entries:2 March 2016, 14:17]

68 "The use of toxic agrochemicals in Argentina is continuously increasing- Analysis of data from the pesticide market in Argentina" Red Universitaria de Ambiente y Salud /Red de Médicos de pueblos Fumigados-(10 dic 2013). Available at: http://www.reduas.com.ar/the-use-of-toxic-agrochemicals-in-argentina-is-continuously-increasing/

The first one is endosulfan –already banned–, while the other two are still intensively used.

I. Endosulfan

i. General features. Impacts on human health

The use of this chemical dates back to the 1950s. It is an insecticide with a high toxicity used in agriculture. It is persistent in the environment[69], and has a great potential for bioaccumulation. Endosulfan is a very toxic chemical for nearly all kind of organisms. It has the potential to cause some endocrine disruption in both terrestrial and aquatic species and causes neurotoxicity and hematological effects and nephrotoxicity"[70]. Furthermore, warnings are issued about escalated risks resulting from its long-range environmental transport, leading to "significant adverse human health and environmental effects, such that global action is warranted"[71]. This was presented by the Persistent Organic Pollutants Review Committee after taking into consideration several scientific reports which prove the point, and with the purpose of including this pesticide in the Stockholm Convention. Finally, the incorporation to the Con-

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69 N. Sethunathan et al., "Persistence of Endosulfan and Endosulfan Sulfate in Soil as Affected by Moisture Regime and Organic Matter Addition," Bulletin of Environmental Contamination and Toxicology 68, no. 5 (May 1, 2002): 725–31, doi:10.1007/s001280314. See also: Organismo de los EE.UU. para la Protección del Medio Ambiente (USEPA). EPA 738-R-02-013, noviembre de 2002.http://www.epa.gov/oppsrrd1/reregistration/endosulfan/finalefed_riskassess.pdf

70 UNEP/POPS/POPRC.4/14 Persistent Organic Pollutants Review Committee. Fourth meeting Geneva, 13–17 October 2008 Consideration of chemicals newly proposed for inclusion in Annexes A, B or C of the Convention: endosulfan. Paragraph 21.

71 Ibid. Paragraph 22.

vention took place in the annex A on April 2011, and entered into force on October 2012.

ii. Endosulfan in the European Union

The proposal of banning Endosulfan globally was made by the EU, which had previously done so in its territory[72], allowing a period of 7 months to member states to withdraw authorization for commercializing products containing this chemical[73], and 2 years for member states related to the application of specified products[74]. Nowadays, it is banned in all of the European Union, except in Spain, where it is still used in the production of hazel nut, cotton, and tomato[75].

iii. Endosulfan in Argentina

In Argentina Endosulfan was used since 1977 in crops like soya, tea, cotton, rice, vegetables, nuts, cereals, maize, potatoes, olives and grapes, among others[76].

Because Endosulfan is a bio-accumulative product, scientists

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72 On 2nd December 2005 was banned by the European Commission. 2005/864/EC concerning the non-inclusion of endosulfan in Annex I to Council Directive 91/414/EEC and the withdrawal of authorizations for plant protection products containing this active substance.

73 2005/864/EC, Art.2 paragraph 2.

74 Ibid.

75 Available at:

http://ec.europa.eu/food/plant/pesticides/eu-pesticides-database/public/?event=activesubstance.detail&language=EN&selectedID=1281

76 AGN (National General Auditor's Office) report approved by Resolution 247/12. (2012) Auditable management of the National Agricultural Chemicals, Veterinarian Products and Food (DNAPVyA)- National Service of Health and Agri-Food Quality (SENASA) in the registration, authorization and / or restriction of agrochemicals pag. 58.

from CONICET[77] and from the Faculty of Agrarian Sciences at the University of Litoral, have shown that the product remained in industrialized food as well as in mature and immature beans[78].

In Argentina, the active principles of Endosulfan were registered by companies from India, Germany, Korea, Israel, and Brazil[79]. The mediatic impact of the death of a boy due to Endosulfan intoxication[80] on April 2011 accelerated the incorporation of Endosulfan into the national legislation, in observance of the Stockholm Convention. After a public consultation, SENASA issued the Resolution 511/2011 banning the import, development, formulation, marketing, and use of the product in all the

77 The National Council of Scientific and Technical Research (CONICET)-Argentina.

78 AGN (National General Auditor's Office) report approved by Resolution 247/12. (2012) Auditable management of the National Agricultural Chemicals, Veterinarian Products and Food (DNAPVyA)- National Service of Health and Agri-Food Quality (SENASA) in the registration, authorization and / or restriction of agrochemicals pag. 67-68.

79 Form 30.125 Approved 29/08/77.Active Principle 080/1. Companies: Asociación de Cooperativas Argentinas Coop. Ltda (Reg.684/1), Bayer S.A. (316/1), Biesterfeld Argentina S.A.(Reg.1216/1), Cardoso Dolores(Reg.784/1), Cheminova Agro de Argentina S.A.(Reg.1196/1), Chutrau S.A.C.I.F.(Reg.710/1), Handelsgesetschaft Von Appen (Reg.1692/1), Helm Argentina S.R.L. (131/2), Magan Argentina S.A. (080/1), Magan Argentina S.A. (Reg.080/2).

80 The case was the following: Nicolas Arevalo (4 years old), was born in a farm in Lavalle, Corrientes who died on 3 April 2011 in the Pediatric Hospital "Juan Pablo II" of Corrientes after had arrived in critical condition with severe pain throughout the body and vomiting; with an intoxication caused, according to the autopsy performed later by the intake insecticide Endosulfan. The owner of the farm where he had used endosulfan was put on trial for culpable homicide. The trial is nowadays ongoing on the Court of Instruction No. 2 of the city of Goya, Corrientes-Argentina.

territory[81]. However, a period of grace was conceded till 1st July 2012 to import the product[82], and one year more for the development, formulation, marketing and use of it, with purpose of exhausting the stock[83].

II. Glyphosate

i. General features

Glyphosate is a "broad-spectrum, post-emergent, non-selective, systemic herbicide which effectively kills or suppresses all plant types, including grasses, perennials, vines, shrubs and trees. When applied at lower rates, glyphosate is a growth-plant regulator and desiccant"[84]. It is very widely used in agriculture, being applied through the following methods: aerial, broadcast, spot and spraying. Before the incorporation of transgenic crops, it was used only after harvesting, as a post-emergent application; however, its use has now broadened to all stages, especially in crops like corn, cotton, canola and soybean[85].

Because it is systemic in its functioning, this herbicide is absorbed through the leaves, and then transported via the sap to permeate the plant in its entirety[86]. The risk to human health

81 SENASA Resolution 511/2011, Art.2.

82 Ibid, Art. 1.

83 Ibid, Art. 2.

84 IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, "Some Organophosphate Insecticides and Herbicides: Diazinon, Glyphosate, Malathion, Parathion, and Tetrachlorvinphos . Volume 112.," 2015. pp. 3.

85 Ibid. pp. 3.

86 "Plaguicidas Con prontuario (2004) (Santiago de Chile)," Revista Enlace, no. 66 (November 2004).

is therefore not limited to its application process, but rather extends to the processing and consumption of the affected crops.

ii. Effects in human health

Glyphosate has been the object of many scientific studies during the last two decades. The results of these studies have produced worrying information about its effects in human health. Among other things, it has been found that glyphosate produces cytotoxic and that has DNA-damaging properties in human-derived buccal epithelial cells[87], celiac disease and gluten intolerance[88], manganese deficiency, neurological diseases and associated pathologies[89]. In addition, Glyphosate is a hepatic and endocrine disruptor in human cell lines[90], and has effects on hormones: it could block receptors for male sex hormones[91] or inhibit the production of estrogens[92], in prenatally periods induce

87 Verena J. Koller et al., "Cytotoxic and DNA-Damaging Properties of Glyphosate and Roundup in Human-Derived Buccal Epithelial Cells," Archives of Toxicology 86, no. 5 (May 2012): 805–13, doi:10.1007/s00204-012-0804-8.

88 Anthony Samsel and Stephanie Seneff, "Glyphosate, Pathways to Modern Diseases II: Celiac Sprue and Gluten Intolerance," Interdisciplinary Toxicology 6, no. 4 (January 1, 2013), doi:10.2478/intox-2013-0026.

89 Stephanie Seneff and Anthony Samsel, "Glyphosate, Pathways to Modern Diseases III: Manganese, Neurological Diseases, and Associated Pathologies," Surgical Neurology International 6, no. 1 (2015): 45, doi:10.4103/2152-7806.153876. Miguel A Faria, "Glyphosate, Neurological Diseases - and the Scientific Method," Surgical Neurology International 6, no. 1 (2015): 132, doi:10.4103/2152-7806.162550.

90 Céline Gasnier et al., "Glyphosate-Based Herbicides Are Toxic and Endocrine Disruptors in Human Cell Lines," Toxicology 262, no. 3 (August 2009): 184–91, doi: 10.1016/j.tox.2009.06.006.

91 Ibid.

92 Richard S et al (2005) Differential effects of glyphosate and Roundup on human placental

malformation on embryonic and placental cells[939495], chronic kidney deficiencies, liver congestion and necrosis, as well as cancer, after long-term exposition[96]. The studies also have shown its persistent effect when consumed through contaminated food or water: 15 or 20% is absorbed into the body[97] and the effects remain after one week[98] [99]. In Argentina several recent studies

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cells and aromatase. Environmental Health Perspectives Vol 113 pp716–720. Dallegrave E et al (2007).

93 Nora Benachour and Gilles-Eric Séralini, "Glyphosate Formulations Induce Apoptosis and Necrosis in Human Umbilical, Embryonic, and Placental Cells," Chemical Research in Toxicology 22, no. 1 (January 19, 2009): 97–105, doi:10.1021/tx800218n.

94 Dallegrave E, "Pre- and Postnatal Toxicity of the Commercial Glyphosate Formulation," Wistar Rats Archives of Toxicology 81 (2007): 665–73.

95 Poulsen MS, Rytting E, Mose T, Knudsen LE (2009) Modeling placental transport: correlation of in vitro BeWo cell permeability and ex vivo human placental perfusion Toxicology in Vitro 23:1380–1386.

96 Gilles-Eric Séralini et al., "Republished Study: Long-Term Toxicity of a Roundup Herbicide and a Roundup-Tolerant Genetically Modified Maize," Environmental Sciences Europe 26, no. 1 (December 2014), doi:10.1186/s12302-014-0014-5.

97 IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, "Some Organophosphate Insecticides and Herbicides: Diazinon, Glyphosate, Malathion, Parathion, and Tetrachlorvinphos . Volume 112." Williams GM, Kroes R & Munro IC (2000) Safety Evaluation and Risk Assessment of the Herbicide Roundup and Its Active Ingredient, Glyphosate, for Humans Regulatory Toxicology and Pharmacology Vol 31 pp. 117–165.

98 Brewster DW, Warren J & Hopkins WE (1991) Metabolism of glyphosate in Sprague–Dawley rats: tissue distribution, identification, and quantitation of glyphosate-derived materials following a single oral dose. Fundamental & Applied Toxicology. Vol 17 pp43–51.

99 Anadon A et al. (2009) Toxicokinetics of glyphosate and its metabolite aminomethyl phosphonic acid in rats. Toxicology Letters Vol.190 pp 91–95.

have also shown these negative impacts in the population. In contrast to these studies, the Joint Meeting FAO/WHO on Pesticide Residues (JMPR) concluded in a report dated May 2016 that "...[i]n view of the absence of carcinogenic potential in rodents at human-relevant doses and the absence of genotoxicity by the oral route in mammals, and considering the epidemiological evidence from occupational exposures, the Meeting concluded that glyphosate is unlikely to pose a carcinogenic risk to humans from exposure through the diet"[100].

iii. The International Agency for Research of Cancer (IARC)

Taking into consideration the scientific evidence, the International Agency for Research of Cancer (IARC) reclassified glyphosate in April 2015 and stated that it was *"probably"* carcinogenic to humans. Until that moment it had been considered *"possibly"* carcinogenic to humans, being in a lower-category hazard[101].

Glyphosate is now in category 2A, which implies that "the degree of evidence of carcinogenicity in humans is almost suf-

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100 Summary Report from the May 2016 Joint FAO/WHO Meeting on Pesticide Residues (JMPR) Availble at: www.who.int/foodsafety/jmprsummary2016.pdf?ua=1

101 The IARC reviews the carcinogenic risk of chemical products to humans. To select the substances to be analyzed, it takes into consideration that: "(a) there is evidence of human exposure and (b) there is some evidence or suspicion of carcinogenicity" and prepares a monograph classifying the compounds on a scale of decreasing certainty: group 1 is for agents that are carcinogenic to humans; 2A, probably carcinogenic to humans; 2B, possibly carcinogenic to humans; 3, not classifiable; and 4, probably not carcinogenic to humans. (IARC (2006) Monographs on the evaluation of carcinogenic risk to humans. Preamble (WHO-IARC - Lyon, France) pag. 3).

ficient" and "there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals"[102][103].

Even though the assessment presented by the IARC is not legally binding for States, the information is a reference for international and national authorities in the formulation of public health policies as well as for legislating the use, restrictions and no-use of those compounds.

iv. International regulation of glyphosate

As it happens at the level of states, regulation in supranational organizations may also differ from each other. Some states, like El Salvador, have advocated for an absolute prohibition[104] of glyphosate, or Sri Lanka which at the beginning banned it in some regions, to gradually extend the ban towards a complete prohibition[105]. Others opt for restricting the use only for pre-harvest, limiting the extent or intensity of use, sometimes

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102 Ibid. Preamble page 22.

103 An example of scientific reactions against this report Can be found at:http://academicsreview.org/2015/03/iarc-glyphosate-cancer-review-fails-on-multiple-fronts/

104 Sustainable Pulse. El Salvador Government bans Roundup over deadly kidney disease. *(September 19 2013). Available at: http://sustainablepulse.com/2013/09/19/el-salvador-government-bans-roundup-over-deadly-kidney-disease/#.VmBgG7_zbKR [Last access:11 Nov 2015, 14:55].*

105 Available at: http://www.gmwatch.org/index.php/news/archive/2014/15350-glyphosate-to-be-banned-in-sri-lanka *[last access: 11 Nov 2015, 15:09];* Colombo page New Desk. Sri Lankan President orders to ban import of glyphosate with immediate effect *(2015)* Available at: http://www.colombopage.com/archive_15B/May22_1432308620CH.php *[Last access: 11 Nov 2015, 15:55].*

only to specific crops, like in the case of Canada[106] and the Netherlands[107].

v. Regulation in the European Union[108]

Glyphosate is allowed in the EU since 2002[109]. Within the EU glyphosate is used in agriculture and horticulture to combat weeds before sowing, but not after sowing to kill weeds growing amongst the crops, where GM plants with resistance to glyphosate are grown[110].

After the re-categorization of glyphosate as "probably carcinogenic" by the IARC, Germany was appointed as a Rapporteur Member State in order to re-evaluate the carcinogenic risk of glyphosate, as well as the risks to human health following the process and rules for the authorization of plant protection

106 See the official web page at:
http://www.hc-sc.gc.ca/cps-spc/pest/part/consultations/_prvd2015-01/prvd2015-01-eng.php

107 Cordero Heredia, D. and Sánchez, Francisca - Regulaciones Internacionales del Glifosato en Boletín 245 de la Red por una América Latina Libre de Transgénicos/Coordinación: Acción Ecológica.

108 The EU regulates the use of pesticides through specialized institutions. The European Food Safety Authority (EFSA) through the Pesticide Steering Committee (PSC) carries out the risk evaluation. There are 2 norms which are the core of regulating pesticides. Regulation (EC) N°1107/2009 Art.1 rules all the issues related to plant protection products on the market and the process of national authorization, and aims to protect animal and human health as well as the environment, having always as transversal the precautionary principle. Moreover, the Regulation (EC) N° 396/2005 states the maximum residue levels of pesticides on foodstuff based on products of agricultural or animal derivation.

109 Registration N° 6511/VI/99-final

110 ECHA- European Chemicals Agency. Available at: https://echa.europa.eu/chemicals-in-our-life/hot-topics/glyphosate

products in commercial form and for their placing on the market, use and control within the Community[111].

The Federal Institute for Risk Assessment (Bundesinstitut für Risikobewertung) sent the report to the EFSA concluding that "glyphosate is unlikely to pose a carcinogenic hazard to humans and the evidence does not support classification with regard to its carcinogenic potential"[112]. Meanwhile, on 25 February 2016, the München Institution on Environmental (Umweltinstitut München) found glyphosate residuals in 14 branches of beers above the regulatory maximal limits of the EU[113]. The ECHA's Committee for Risk Assessment (RAC) adviced to maintain the classification of glyphosate as a substance causing serious eye damage and being toxic to aquatic life with long-lasting effects, but found insufficient scientific evidence to classify glyphosate as a carcinogen, as a mutagen, or as toxic for reproduction[114].

Taking into account the ECHA opinion together with those from Member States The European Commission, under Regulation (EU) 2017/2324 the authorization of its approval was extended till 15 December 2022[115].

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111 Regulation (EC) No 1107/2009 of the European Parliament and of the Council.

112 EFSA (European Food Safety Authority) Conclusion on the peer review of the pesticide risk assessment of the active substance glyphosate. EFSA Journal 2015;13(11):4302, 107 pp. doi: 10.2903/j.efsa.2015.4302 p. 11.

113 Deutsche Welle (25 feb 2016) "Pflanzengift im deutschen Bier", available at: http://www.dw.com/de/pflanzengift-im-deutschen-bier/a-19074266

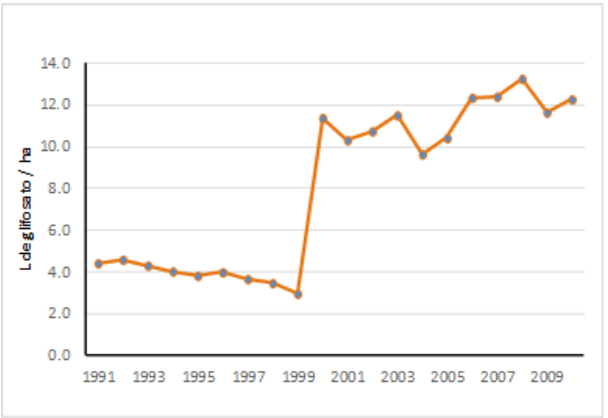
114 ECHA/PR/17/06.

115 See: Regulation (EU) 2017/2324, available at: http://ec.europa.eu/food/plant/pesticides/eu-pesticides-database/public/?event=activesubstance.detail&language=EN&selectedID=1438

vi. In Argentina

The use of glyphosate in Argentina[116] is linked to the exponential growth of transgenic crops. As stated above, the introduction of the transgenic soya bean –Soya RR – which is resistant to glyphosate, generated a dependence upon the technological package produced by the company Monsanto. Later other seeds with similar characteristics were introduced, which exponentially incremented the use of glyphosate. (See Annex 1).

The graph below shows how the use of this herbicide has risen: from 3 liters in 1999 to 13.5 liters per hectare in 2008.



Source: Cámara de sanidad Agropecuaria y Fertilizantes (CASAFE)-Argentina[117]

116 Registered under Resolution 350/99 from the SAGPyA. It was authorized in 1977 and re-authorized in 1999.

117 Available at: http://observatoriosoja.org/dato-regional/el-cultivo-de-soja-promueve-el-uso-de-agroquimicos-con-potenciales-consecuencias-para-el-medio-ambiente-y-la-salud/

Moreover, the expansion of the agroindustry with the subsequent use of glyphosate has become a policy trend during the last decade. Until the year 2020 it is expected to increment agro-exports by 153%[118]. This announcement was made by the then President Cristina Fernandez de Kirchner on February 2015 in relation with important investments into the production of Glyphosate[119].

Currently an administrative complaint and a precautionary measure are pending of approval in the Córdoba province, both-motivated by the re-categorization made by the IARC,with the aim of *"excluding glyphosate (active and formulated beginning) from the list of authorized products"* as well as *"restricting its use "*[120] and based on the fact that so far a cultivable land sized 6,500,000 hectares has been planted with maize and RR soybeans, with a glyphosate usage rate of 10 liters equivalent kg/ha. This accounts for a yearly use of 65 million liters-kg of glyphosate. The indicated area is inhabited by small and medium density populations, representing an approximate 800,000 people who are directly exposed to the fumigations. In summary, there is a glyphosate exposure charge of 81.25 l-k / inhabitant / year in Cordoba.

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118 See: Plan Estratégico Agroalimentario y Agroindustrial Participativo y Federal 2010-2020, page 63. Available at the official web page: www.minagri.gob.ar. In the same direction the "Plan Nacional de Ciencia, Tecnología e Innovación Argentina 2020 -March 2013" which gave a deeply impulse to the biotechnology applied in Agro-business.

119 See at: http://www.cfkargentina.com/palabras-de-cristina-kirchner-cadena-nacional-anuncio-de-aumento-de-la-ayuda-escolar-anual-trenes-educacion-escuelas-inversiones/

120 Presented in Cordoba (Argentina) on 20th May 2015.Available at: http://www.reduas.com.ar/wp-content/plugins/download-monitor/download.php?id=100. Another presentation was also made in Chaco(Argentina).

The most transcendental case is made by a prosecutor who is asking for the total suspension of the use of glyphosate in all the State. Among other arguments, the prosecutor stated that "the methodology followed to evaluate toxicity does not consider sub lethal and chronic doses (in medium and long periods of time), but only takes acute effects into account"; "it is necessary that an evaluation is made by independent entities, contrary to what happens today, where the risk assessment (of agrochemicals) are provided by the companies (which market them)". He also highlighted the validity and necessity of application of the precautionary principle (in force in Law 25.675)[121]. However, the legal appeal was denied. Had it been admitted, it would have had affected the agricultural value chain, employment, domestic and foreign trades, research agendas, product development and food sovereignty, leading to an impairment of common legal rights of members of the community[122].

III. The 2,4-dichlorophenoxyacetic acid: 2,4-D

i. General Features. Impacts in human health

The acid 2,4-D is a wide spectrum but selective, and hormonal systemic herbicide. It is absorbed by the leaves and the roots, transported through the sap to all the plant.

After the World War II, this formula was mixed with another one by the name 2,4,2T, resulting in what came to be known as Agent Orange. This herbicide was widely used by the US during the Vietnam War and by the United Kingdom in Malaysia, with

121 "Gimenez, Alicia Fany y otros c/ en-Ministerio de Agroindustria y Otros s/ Proceso de Conocimiento", Camara Contencioso Administrativo Federal Sala iii Causa Nº 22.339/2014

122 Available at: www.elderecho.com.ar/includes/pdf/diarios/2017/09062017

the purpose of increasing the visibility of warplanes, thereby destroying vegetation and crops. Then these chemicals began to be used as pesticides in agriculture. The use of 2,4-D and 2,4,5-T increased during the 15 following years, and in 1983 the United States Environmental Protection Agency (EPA) banned the use of 2,4,5-T for its potential to cause cancer and other health problems, but not the formula 2,4-D [123].

The 2, 4 D is neurotoxic. It is rapidly inhaled or absorbed through the skin, and it might cause damage to the liver, kidneys, muscles and brain tissue[124]. It may cause genetic mutation, demonstrated in animal testing and human studies[125]. It has also been demonstrated that it is an endocrine disruptor and that it produces reproductive toxicity[126]. There are several studies that have related the exposure to this formula to different types of

123 Bejarano González, Fernando *(2007)* 2,4-D Respuestas a preguntas frecuentes. Razones para su prohibición mundial Red de Acción sobre Plaguicidas y Alternativas en México *(*RAPAM*) (*1a edición. México, Enero del 2007*)* pages 8 and 20.

124 Berajano Gonzales page 25 citing to Anon *(*2005*)*, 2,4-Dichlorophenoxyacetic acid *(*2,4-D*) (*CASRN 94-75-7*)* Integrated Risk Information System*(*IRIS*)*, US Environment Protection Agency http://www.epa.gov/iris/subst/0150.htm; and Shawnee Hoover "2,4-D Escapes Federal Axe. For Now, two states and Canada pursue restrictions". Pesticides and You Vol. 25, No. 4, 2005-2006, p. 23.

125 Berajano Gonzales citing to Anon *(*1999*)*. Occupational Safety and Health Guideline for 2,4-D *(*Dichlorophenoxyacetic Acid*)* Health Guidelines – 2, 4-D; Occupational Safety and Health Administration *(*OSHA*)*, US Department of Labor. http:/
/www.osha.gov/SLTC/healthguidelines/2_4d-dichlorophenoxyaceticacid/recognition.html.

126 Anon 2004. Chemical Wath fact sheet 2, 4 D Beyond pesticides, 701 E street SE suite 200. Washington DC 20003. Available at: www.beyond pesticides.org

cancer, especially the non-Hodgkin`s Lymphoma[127][128]. In spite of this, the herbicide 2, 4-D was classified by the IARC as a *"possibly"* carcinogenic to humans (Group 2B). This means that there is inadequate evidence in humans and limited evidence in experimental animals[129].

ii. International Regulation

In Quebec, Canada, its domestic use and application in green places[130] has been banned. The Australian Pesticides and Veterinary Medicines Authority (APVMA) has cancelled its registration.[131].

Within the EU it is registered under regulation 7599/VI/97-final, as well as under the same legislation of Glyphosate auditioning to its special legislation[132]. Its licence expires on December 31st of 2030.

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127 Anon 1998. Chemical sapling Information 2, 4 D Occupational Safety and health administration (OSHA) Us department of labor www. Osha.gov/dts/chemiclsampling/data/CH_231150.html

128 Anon 2004.Chemical Wath fact sheet 2, 4 D Beyond pesticides, 701 E street SE suite 200. Washington DC 20003.www. beyond pesticides.org

129 IARC Monographs Volume 113 (June 2015), public also in The Lancet Oncology Carcinogenicity of lindane, DDT, and 2,4-dichlorophenoxyacetic acid Volume 16, No. 8, p891–892, August 2015

130 See the official web site: http://www.mddelcc.gouv.qc.ca/pesticides/permis-en/code-gestion-en/espace-vert.htm

131 The decision dated from August 21th 2013. Available at: http://sustainablepulse.com/2013/08/24/apvma-australia-bans-toxic-herbicide-24-d-products/#.VmRr-r_zbK9 [last entries:18 March 2016,08:08pm]]

132 The Commission implemented the Regulation (EU) 2015/2033 of 13 November 2015 in accordance with Regulation (EC) No 1107/2009 of the European Parliament and of the Council and modifying the Annex to Commission Implementing Regulation (EU) No 540/2011.

iii. The 2-4, D in Argentina

In Argentina, the use of the 2, 4-D is increasing due to the growing resistance in weeds as a result of the excessive use of glyphosate [133]. But also, some transgenic seeds have been incorporated in the catalogue of the authorized transgenic beans with resistance to the 2, 4-D[134]. Although their use is allowed, there are a variety of restrictions in some provinces and municipalities[135]. For instance, in the province of Santa Fe, the 2,4-D was banned under Resolution 135/15 as a result of an administrative claim made to the Ministry of Production of this province by a group of NGOs[136]. In Santiago del Estero, Resolution 86/97 and Disposition 20/98 prohibited post-emergent applications (terrestrial, aerial or manual) of herbicides based on 2,4-D. In Chaco, Resolution 396/13 also establishes the prohibition of herbicides based on the active ingredient 2,4D: when in form of butyl ester, in any concentration) as applied in air or land, and when in its salt-form dimethylamine, in any concentration applied via aerial spreading. In Córdoba, Ministerial Resolution No. 112/2016 bans the use of herbicide 2,4 D in ester formulations, throughout the territory of the province of Córdoba between August and March of each year.

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133 Souza Casandinho, J. Las plantas silvestres, nuevos transgénicos y el herbicida 2, 4 D. La necesidad de un manejo integral desde la comprensión a la acción. Available at: http://www.isepci.org.ar/descargas/publicaciones/las-plantas-silvestres-nuevos-transgenicos-y-el-herbicida-2-4-d_113.pdf *[*Last entries:18 Dec 2015, 5:10 p.m.*]*

134 See Annex 1.

135 Córdoba: Re. 197/98, Res 954/98, Res 297/00 Act No. 8.820 and resolutions 197/98, 954/98, 283/00 and 297/00; Santa Fe: Res 135/15; Chaco: Res 2/01; Santiago del Estero: (Res. 86/97, Disp. 20/98; Entre Ríos, Res. 07/03; Tucumán: Dec. 1610/03, Res 619/05/Res 044.

136 Ministry of Production- Santa Fe Resolution No. 135/15.

PART II: LEGAL AND NORMATIVE FOUNDATIONS

3) LEGAL AND INSTITUTIONAL FRAMEWORK OF ARGENTINA

1. General framework

In terms of political-institutional organization, Argentina takes the form of a Federal Representative Republic[137]. Its institutional organization is structured around three jurisdictional levels: the national level, the provinces and the municipalities. This organization implies a decentralization and partial overlapping of institutional power and attributions between the federal government and the local governments. As a general principle established in article 121 of the National Constitution (NC), the provinces retain all the power not delegated in the NC to the federal government[138]. Besides, both the nation and the provinces have 3 different orders of authority: Executive, Legislative and Judicial. Each of them has the exclusive attributions given by the Constitution and the respect to the principle of powers division.

In general, the National Legislative Authority has the competence to legislate in matters of international and local commerce, including –among others– those attributions related to the substantive legislation in topics such as criminality, civil,

137 Argentine National Constitution Art.1.

138 The delegated competences are only in the following articles of the National Constitution: Art.31, 75,99,126 and 127.

commerce, transportation, labor and mining[139]. In terms of environmental issues, the National Legislative Authority has the faculty to rule the minimum basis of environmental protection[140].All other topics are legislated directly by the provinces. In this regard, it is important to highlight that all natural resources existing in each of the 23 Argentine provincial territories are original public domain of the provinces themselves[141]. Hence, the provinces have the attributions to control and regulate them.

The prioritization of norms must follow the subordination principle as reflected in the order given by the NC. From an integrate and systemic reading of various articles of the NC[142], the following ranking order could be established: 1) NC and HRs Treaties; 2) Other treaties; 3) National Legislation; 4) Provincial Juridical System (Provincial Constitution-Legislations-Municipal Regulations). It is worth mentioning that Art. 27 states that the principles of public law established in the NC take precedence over international treaties, and thus the latter must be in concordance with the former. These principles, namely freedom and equality, are the core of the juridical system.

2. Particular Frameworks

a. Agrochemicals

Given that the attribution to rule over commerce is exclusively federal (Art.75.12) – which includes not only the commercialization of a product, but also its fabrication, distribution,

139 Ibid.Art.121,126, 75 paragraph 13

140 Argentine National Constitution. Art. 41.

141 Ibid. Art. 124.

142 Ibid. Art. 31,75 paragraph 22.

transportation and marketing –, the regulation on agrochemicals is a competence of the national government, which implies that the regulations are applicable throughout the Argentine territory. Analogously, the norms regarding the registration and control of agricultural products are also under federal competence.

The provinces must respect the legislation of the national government, yet they have the faculties to increase protection as compared to that required by the national government (they cannot give less protection), and can even ban some products when they consider it necessary. Moreover, the use, application and control of this legislation is particularly the competence of provinces, because they have to oversee the natural resources within their own territories.

The registration, authorization and commercialization of agrochemicals both for domestic and agricultural use, belongs to the National State, which exercises it through two specialized agencies: National Service of Health and Agri-Food Quality (SENASA) – which is under the sphere of the Ministry of Agroindustry– [143] and National Administration of Medicines, Food and Medical Technology (ANMAT) –under the Ministry of Health[144].

SENASA has as main attributions to establish conditions for the use of agrochemicals as well as ruling the MRL (Maximum Residue Limit) values, which is the maximum concentration of residue of a legally permitted pesticide in products and by-products of agriculture. In addition, it is the institution with authority to apply and execute the legislation on agrochemicals through its specialized departments: National Direction of Agrochemi-

143 SENASA Decree No.1585/96 and Resolution 350/1999.

144 Resolution 709/1998 of the Ministry of Health.

cals, Veterinary Products and Food (DNAPVyA); the Direction of Agrochemicals and Biology (DIRABIO)[145]; the System of Control of Fresh Fruits and Vegetables (SICOFHOR)[146] (See Annex 3).

In brief, the utilization of agrochemicals has two levels. On the one hand, the national level authorizes their circulation, production, commercialization, import, export, etc. On the other hand, at the local level, the authorities determine the modalities of application over the diverse type of substances in question within their own jurisdictions [147].

b. Genetically modified organisms

The Argentinian legal framework deals with GM vegetables based on the resolutions from the Secretary of Agriculture, Livestock and Fishing (SAGyP) which are in accordance with the binding national normative framework[148]. Correspondingly, from the year 1991 onwards, a system of agro-biosecurity was created with the aim of guaranteeing environmental and health standards related to international commerce and the control of the GMOs production. With this purpose, there are specialized organisms in charge of controlling the production process in all the stages: from the creation in the lab, to the cultivation in the field, and including also their consumption.

The evaluation of independent specific aspects of the

145 Created by SENASA Resolution 805/11.

146 Created by SENASA Resolution 637/2011.

147 Berros, Valeria, "Observaciones Sobre El Principio Precautorio En Argentina," Revista Catalana de Dret ambiental, Vol. IV, no. Núm. 2 (2013): 1–24.

148 SAGPyA Resolution 244/2004; SAGPyA Resolution 57/2003 (Requirements and forms to the authorization of GMOs); SAGPyA Resolution 39/03; SENASA Resolution 412/2002 (Criteria to evaluate food derivate from GMOs); SAGPyA Resolution 511/98; SAGPyA Resolution 226/97.

GMOs is carried out and each institution issues a non-binding resolution, which are then taken into consideration in the final decision issued by SAGyP approving or refusing the the GMOs at stake. (See Annex 4)

4) OVERVIEW OF THE RIGHTS TO HEALTH AND ADEQUATE FOOD

1. Right to health

1. Legal foundations

The right to health is a fundamental HR which is part of the bill of rights recognized in most HRs instruments. As such, it is an essential right for human dignity throughout the life of an individual.

The right to health has been recognized in non-binding instruments like in the Constitution of the WHO and is defined as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"[149], as well as in the Universal Declaration of HRs (UDHR), where health is named as a part of adequate standard of living under the scope of Art. 25[150].

The core legally binding instrument where the right to

149 Constitution of the World Health Organization(WHO) adopted by the International Health Conference (New York 19 June to 22 July 1946).

150 UN General Assembly, Universal Declaration of Human Rights, 10 December 1948, 217 A (III), n.d.

health is acknowledged is the ICESCR[151]. Its Art. 12.1 rules that "[t]he States Parties to the present Covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health" as well as its Optional Protocol to the ICESCR. Other specific international treaties recognize it as well, such as the International Convention on the Elimination of All Forms of Racial Discrimination (CERD): Art. 5 (e) (iv), the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW): Arts. 11 (1) (f), 12 and 14 (2) (b); Convention on the Rights of the Child(CRC): Art. 24; International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families (ICRMW): Arts. 28, 43 (e) and 45 (c); Convention on the Rights of Persons with Disabilities(CRPD): Art. 25. As well as regional instruments such as the African Charter on Human and Peoples' Rights (ACHPR): Art.16, the Additional Protocol to the American Convention on HRs in the Area of Economic, Social and Cultural Rights (Protocol of San Salvador): Art.10 and the European Social Charter (ESC): Art.11.

Countries like India, Ecuador and South Africa have recognized the right to health in their National Constitutions as well as other 112 countries[152].

2. Status in Argentina

Argentina is part of the ICESCs[153] and the Optional Proto-

151 UN General Assembly, International Covenant on Economic, Social and Cultural Rights, 16 December 1966, United Nations, Treaty Series, vol. 993, p. 3, n.d.

152 UN Office of the High Commissioner for Human Rights (OHCHR), "Fact Sheet No. 31, The Right to Health," June 2008, pp. 10-11.

153 Signature: 19 Feb 1968. Ratification/Accession: 8 Aug 1986.

col[154].Thus, both are legally binding for the country. Before 1994, the right to health was implicitly recognized within the NC under Art. 33[155]. After the constitutional reform in 1994 the Covenant has attained constitutional hierarchy and thus the right to health is explicitly incorporated. In addition, the NC establishes that the rights recognized in the constitution and the international treaties must be guaranteed also by legislation and positive actions with the purpose of assuring both equal treatment and their plenty enjoyment[156]. Moreover, the right to health is acknowledged as being linked with the rights of consumers and users of public services, also with constitutional hierarchy[157].

Within the American continent, Argentina incorporated the Inter-American Convention on HRs (IACHR) to its NC, and it also became part of its protocol: The Protocol of Salvador, where the right to health is explicitly recognized and thus, is also legally binding for the party States[158].

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154 Signature: 24 Sept 2009. Ratification on 24 Oct 2011 with a declaration with regard its sovereignty over the Malvinas islands, South Georgia Islands and South Sandwich Islands, rejecting the application of the Covenant and its Protocol in these territories.

155 Argentine National Constitution. Art. 33: "The declarations, rights and guarantees enumerated in the Constitution shall not be construed as a denial of other rights and guarantees not recognized; but rising from the principle of the sovereignty of the people and the republican form of government".

156 Ibid. Art. 72, paragraph 23.

157 Ibid. Art. 42 "The consumers and users of goods and services have the right, in the ratio of consumption, the protection of health, safety and economic interests; to an adequate and truthful information; the freedom of choice, and fair conditions and decent treatment".

158 A-52: Additional Protocol to the American Convention on Human Rights in the area of economic, social, and cultural rights "Protocol of San Salvador" - OAS, Treaty Series, No. 69, Art. 10

3. Content

a. General definitions

Following Boruchovitch and Mednick[159], the term "health" has had different approximations. The traditional concept –including the medical conception– refers to health as an absence of illness and this conception was widely accepted till the end of the World War II. After the end of the WWII however the definition incorporated other dimensions. The WHO, defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity"[160]. Thus, not only the physical or biological criteria are included, but also the social and psychological aspects characterize an integral state of health. There is also an environmental approach, which considers that health is a relative concept that establishes a relationship between the life of an individual and the environment, which consequently determines the quality of life.

b. Definition from a legal perspective

From a legal perspective, and considering that the right to health is recognized in several international instruments, Art. 12.1 of the ICESCRs states that: it is "the right of everyone to the enjoyment of the highest attainable standard of physical and mental health", further establishing in paragraph 2 the steps that States

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signed by argentine on 17/11/88 and ratified on 30/06/03.

159 Boruchovitch, E. and Mednick, Birgitte R., "The Meaning of Health and Illness: Some Considerations for Health Psychology," Psico-USF, 7, no. 2 (December 2002): 175–83.

160 Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19-22 June 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948. The Definition has not been amended since 1948.

parties should take in order to guarantee the full realization of the right. Even though the social aspect is not present in the text of the law, as shown below, it is certainly implicit.

Following the interpretation given by the Committee on Economic, Social and Cultural Rights, which has the authority over the ICESCRs (hereinafter the "Committee"), the goal established in Art.12 is "living a life in dignity"[161]. Even though the idea of dignity has progressively mutated through history, the conception of dignity has "...[a] basic minimum content of the meaning of human dignity [...]: that each human being possesses an intrinsic worth that should be respected, that some forms of conduct are inconsistent with respect for this intrinsic worth, and that the state exists for the individual not vice versa"[162].

In addition, the right to health presents two dimensions: an individual and a collective one. This was affirmed by the Court of Appeal of the Autonomous City of Buenos Aires in a case where the discussion was based on the lack of access to information about the nutrition of a sector of a population, and the subsequent violation of the right to information, the right to health and the right to adequate food as its preconditions[163].

As indicated, "everyone" is considered as right-holder of the right to health, as we will see further developed in Chapter 7.1

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161 UN Committee on Economic, Social and Cultural Rights (CESCR), "GC No. 14: The Right to the Highest Attainable Standard of Health (Art. 12 of the Covenant)" (E/C.12/2000/4, August 11, 2000). Paragraph 1.

162 McCrudden, Christopher, "The European Journal of International Law" 19, no. 4 (2008): 655–724. Page 723.

163 "Asociacion civil por la igualdad y la justicia contra GCBA sobre amparo (art. 14 ccaba)", Expte: exp 27599 / 0 paragraph 11.

c. The curative and preventive dimensions. Freedoms and entitlements.

The right to the "highest attainable standard of health" –term used in several conventions and declarations to acknowledge health as a fundamental HR[164]– presupposes a relative standard in the realization of the right, and not an absolute one. This is directly related to the possibilities that the State has in order to use its resources to the maximum in order to comply with its obligations. The highest standard of health also shall be indicated in accordance with biological and socio-economic factors[165], as well as with the realization of other fundamental rights which may not only work as preconditions or overlapping rights with regard to health. In this sense "the right to health must be understood as a right to the enjoyment of a variety of facilities,

164 WHO Constitution (Preamble) "The enjoyment of the highest attainable standard of health..."; Convention on the Rights of the Child Article 24(1): States Parties recognize the right of the child to the enjoyment of the highest attainable standard of health; African Charter on Human and Peoples' Rights, Article 16: Every individual shall have the right to enjoy the best attainable state of physical and mental health; The Additional Protocol of the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights (Protocol of San Salvador) "(1) Everyone shall have the right to health, understood to mean the enjoyment of the highest level of physical, mental and social well-being...";WHO and UNICEF Declaration of Alma-Ata adopted at the International Conference on Primary Health Care(1978): "The Conference strongly reaffirms that health, which is a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity, is a fundamental human right and that the attainment of the highest possible level of health is a most important world-wide social goal whose realization requires the action of many other social and economic sectors in addition to the health sector".

165 UN Committee on Economic, Social and Cultural Rights (CESCR), "General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12 of the Covenant)." Paragraph 9

goods, services and conditions necessary for the realization of the highest attainable standard of health".[166]

In this regard, the highest attainable standard of health implies a *curative and preventive* dimension. The first one involves an appropriate health care and the second one refers to conditions related to remaining healthy. However, it is important to highlight that any of these cases must be understood as underpinning the right to be healthy, hence the State should take measures to enjoy the necessary pre-conditions as well as means to achieve the full realization of the right to health[167].

The right to health embodies *freedoms and entitlements*. While the freedoms imply the possibility of an individual to decide over her/his own body and own health, in general, the entitlements refer to the universal right to have a functional health system–encompassing both dimensions: preventive and curative[168]. In particular, these entitlements include, among others, maternal health and reproductive rights, the right to a healthy workplace, and to the preservation of natural environments, treatment and control of diseases, and access to safe water[169].

In relation with the above, the UN Special Rapporteur (SR) on the right to health has written that an "effective and integrated health system", accessible to all without discrimination, must be in accordance with both aspects of health: health care and the determinants of health. He supports his affirmation with the ex-

166 Ibid. Paragraph 9.

167 GC 14." Paragraph 8.

168 Ibid. Paragraph 8.

169 SR: Paul Hunt, "The Right of Everyone to the Enjoyment of the Highest Attainable Standard of Physical and Mental Health" (E/CN.4/2003/58, February 13, 2003). Paragraph 25.

ample of the importance of the State in collecting data regarding all aspects of health, disaggregated also by social groups to be able to attend the necessities of each group, as well as developing other integral measures[170].

d. Preconditions of health

The preconditions –in the sense of the realization of other HRs– are an integral part of the health. In this context, the Committee refers to the access to safe and drinkable water and adequate sanitation, an adequate and safe food, nutrition, housing, healthy occupational and environmental conditions, and the access to health-related education and information, including sexual and reproductive health, which all of them are considered as the constraints for the full realization of the right to health[171]. The precondition follows from the preceding analysis that there are other rights that overlap the right to health with greater or lesser implications and made it dependent of them.

Several cases at the regional sphere have confirmed the integrity and close interdependence with other HRs[172]. For example, at the European level, the right to health has been connected with the right to family, private home[173], and also cases of child labor[174]. In the Americas, the Inter-American Commission on HRs, even when the right to health is not inside its competence orbit,

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170 SR: Paul Hunt, "The Right of Everyone to the Enjoyment of the Highest Attainable Standard of Physical and Mental Health" (A/HRC/4/28, January 17, 2007). Paragraphs 91-92.

171 GC14. Paragraph 11.

172 See also: SR: Paul Hunt, "The Right of Everyone to the Enjoyment of the Highest Attainable Standard of Physical and Mental Health," February 13, 2003. Paragraphs 16-19.

173 López Ostra v. Spain, ECtHR, (ApplicationNo.16798/90) 1994.

174 IC) v. Portugal, ECSR, (Complaint No. 1/1998) 1999.

has connected it to the realization of the right to development (Art.26-American Convention)[175]. An emblematic case in the African Commission on Human and Peoples' Rights was against the Nigeria Government for allowing the violation of the right to health and the environment of a minority group by private companies[176].

e. Core elements

The right to health also contains elements which are totally interconnected, namely: *availability, accessibility, acceptability* and *quality*[177]. The facilities, goods and services must be *available* for all the population as well as any of the necessary conditions or determinants towards its full realization. All of them must be economically and physically *accessible* for every person. In addition, all the facilities, goods and services must be *acceptable* in any given culture. A last requirement is the *quality* of the right to health, which must be scientifically approved and safely, specially each conditioning of health such as food, water, etc.[178].

Finally, even though the right to health embodies a broad variety of aspects, there is a minimum core that States should grant, regardless of the particular influencing factors. The aspects within this essential core, as well as the aspects referring to the progressive realization of the right to the highest attainable standard of health will be developed in Part III.

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175 Jorge Odir Miranda Cortez et al. v. El Salvador, (No.12.249) Inter American Commission on Human Rights (2001), Paragraph 47.

176 SERAC and CESR v. Nigeria, Communication 155/96, Fifteenth Annual Activity Report of ACHPR, 2001-2002, annex V.

177 UN Committee on Economic, Social and Cultural Rights (CESCR), "GC No. 14: The Right to the Highest Attainable Standard of Health (Art. 12 of the Covenant)". Paragraph 12.

178 Ibid. Paragraph 12.

4. The right to life and its connection with health

The right to life established under Art.6 of the International Covenant on Civil and Political Rights (ICCPR), as well as the most of HRs treaties179, has a deep relation with health, food and the environment. The right to life supersedes the full realization of the right to health and all its determinants. The reduction of infant mortality and the improvement of life expectancy established as a State obligation under Art. 12.2.a of the ICESCR are a clear example180. However, the Inter -American Court of HRs in the case Yakye Axa Indigenous Community v. Paraguay, stated that the realization of the right to life implies positive obligations in satisfying minimum standard of living, which includes the preconditions of health181. The reality is that life could be lost if the right to health is not realized and consequently guaranteed.

2. Right to adequate food

1. Legal Foundations

Food is clearly a necessary pre-condition to the existence of human life and, as such, is also a legally recognized HR.

Its recognition in international instruments dates back to 1948, when the UDHR under Art.25 established the right to food as part of the right to an adequate standard of living. After that, it was recognized in Art.11.1 of the ICESCs, under paragraph 2: the right of every human being to be free from hunger. Other international treaties which protect specific groups of people guarantee the right to adequate food – the CEDAW (1979) under

179 ACHPR(Art. 4); American Declaration of the Rights and Duties of Man (Art. 1); Arab Charter on Human Rights (Arts. 5-8); CPRMW (Art. 9); CRC (Art. 6); ECHR (Art. 2); ICCPR (Art. 6); Protocol No. 13 to the ECHR ; Protocol to the ACHR ; Second Optional Protocol to the ICCPR ;UDHR (Art. 3)

180 Toebes, Brigit C. A., The Right to Health as a Human Right in International Law (Groningen-Oxford: Intersentia- Antwerpen, 1999). Page 261.

181 Yakye Axa Indigenous Community v. Paraguay, Judgement of 17 June 2005, paragraphs 162-165.

Art.12.2; the CRC (1989) under Art. 24.2.c) and e) and Art.27.3; and the CRPD (2006) under Art.25.f and 28.1–, all of them in specific contexts, including maternity, health and adequate standard of living. Regional instruments also recognize the right to food like the Protocol of San Salvador (1988) under Art.12 and 17; the African Charter on the Rights and Welfare of the Child (1990) under Art. 14 (2) (c), (d) and (h); and the Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa (2003) under Art.15 and 14.2.b).

Non-binding instruments have also been created with the purpose of providing a framework of reference in the adoption of legislation and the development of public policies aimed at the realization of the right to adequate food. Among others, it is included in: the Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security adopted by the 127th Session of the FAO Council (November 2004), and, at a regional level, the "Framework Law: the right to food, food security and sovereignty"[182].

2. Status in Argentina

As developed above, Argentina has ratified most of the existing binding instruments on HRs. The ICESCR –on which the analysis will be based–, has also constitutional hierarchy[183].

3. Overlapping with other rights

The right to food is an inclusive right[184] and it works also

182 XVIII Ordinary Assembly by the Latin-American Parliament, "Ley Marco: Derecho a La Alimentación, Seguridad Y Soberanía Alimentaria" (Panamá, December 2012).

183 See Part II, Chapter 3.1 and Chapter 4.A.2

184 UN Office of the High Commissioner for Human Rights (OHCHR), "Fact Sheet No. 34, The Right to Adequate Food," April 2010. Page 2.

as a pre-condition for other rights, such as the rights to health, to life, to work, and to have access to social security, as well as to protection from torture, cruel, inhuman or degrading treatment. Furthermore, other rights work as conditions towards the full realization of the right to food. These include the right to information, environmental rights, the right to water, education, adequate housing, participation and association.

4. Relationship with the concept of food security, the human rights approach and food sovereignty

As it was stated above, the right to food has had legal recognition since 1948, becoming legally binding for all the ratifying States from its recognition in the ICESCs. As a corollary of this right, and also a pre-condition of it, the concept of food security emerged in 1974 during the World Food Conference, with the purpose of addressing food supply problems, in particular the very availability of food[185]. These new developments occurred at the time when the green revolution had been introduced in Latin-America with the objective of eradicating hunger and famine. However, the "technical successes of the Green Revolution [has not] automatically and rapidly lead to dramatic reductions in poverty and levels of malnutrition"[186]. The concept of food security was widely discussed since 1984,with regard to other characteristics that appeared as indispensable to be protected:

185 "...availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices" UN General Assembly, "Report of the World Food Conference" *(Rome 5-16 November 1974, 1975)*.

186 UN Food and Agriculture Organization *(FAO)* Expert Consultation, "Trade reforms and food security: conceptualizing the linkages" *(Rome, 2003)*. Page 26.

the *accessibility* of food[187][188], as well as the *adequacy* in the quality, composition and nutrition of it[189]. At present, food security is defined as "a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life"[190].

Although food security has been always considered a global concern, international rules recognize States as individual actors with a worldwide implication. This means that the right is guaranteed to individuals exclusively through legal recognition, including the right to adequate food, which obligates States to provide for its realization in order tofulfill their obligations in terms of HRs. Therefore, achieving food security is the result of the full realization of the existing right to food[191]. However, while

187 "...ensuring that all people at all times have both physical and economic access to the basic food that they need". UN Food and Agriculture Organization (FAO)Director General's Report, "World Food Security: A Reappraisal of the Concepts and Approaches." (Rome, 1983), 198.

188 "...access of all people at all times to enough food for an active, healthy life". World Bank, "Poverty and Hunger: Issues and Options for Food Security in Developing Countries." (Washington DC: World Bank, 1983).

189 "Food security, at the individual, household, national, regional and global levels [is achieved] when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" UN Food and Agriculture Organization (FAO), "Rome Declaration on World Food Security and World Food Summit Plan of Action. World Food Summit" (Rome, November 13, 1996).

190 UN Food and Agriculture Organization (FAO), "The State of Food Insecurity in the World 2001". (Rome, 2002).

191 Bianchi, E. and Szpak, C., Seguridad Alimentaria Y Derecho a Una Alimentación Adecuada, Serie Seguridad Alimentaria Brief#97, 2014. Page 8.

the right to food is sometimes conceived only as a means of achieving food security, the relationship between the two concepts is much more complex. Indeed, because the law on HRs imposes heavy obligations on States, it may achieve food security without complying with the right to food. By way of illustration, consider a discrimination in the distribution of supplies. The Food security approach could lead to such an outcome where despite the existence of sufficient supplies of safe and nutritious food, the right to food is not fully respected, thus affecting also other HRs [192].

The human rights approach being developed by the UN in its effort to incorporating human rights in its public policies guidelines and programs for development, also applies in the case of food security. The core principles of this approach are the following: participation, responsibility, non-discrimination, empowerment, and the rule of law. This implies that food security programs and policies should focus on the most disadvantaged groups, and formulate the public policies and programs following these guidelines, also established in the law[193].

Finally, it is important to mention that the concept of food sovereignty developed in the last two decades with a close relation with this topic:

> "Food sovereignty is the right of peoples to define their own food and agriculture; to protect and regulate domestic agricultural production and trade in order to achieve sustainable develop-

192 FAO-Estudio Legislativo 91 "Directrices en materia de legislación alimentaria *(nuevo modelo de ley de alimentos para países de tradición jurídica romano-germánica)* Page 152.

193 Ibid. page 155.

ment objectives; to determine the extent to which they want to be self-reliant; [and] to restrict the dumping of products in their markets" [194].

The framework for the global governance of agricultural and food systems incorporates a wide range of issues, such as agrarian reform, land control, local markets, biodiversity, autonomy, cooperation, debt, health, and other related to the ability to produce food locally, such as sustainability, seeds protection, access to land, water, community control over natural and genetic resources, fair prices, agro-ecological production, and so on. Here the framing is more collective than individual, since the right holders are "peoples", which also implies a a specific cultural approach to the way of deciding food choices, preparation and acquisition[195].

5. Content

a. Legal definition

Because the right to food is not defined within the ICESCRs, its normative content has been specified by the Committee in GC nº12. The Committee states that "[t]he right to adequate food is realized when every man, woman, and child, alone or in community with others, have physical and economic access at all times to adequate food or means for its procurement"[196].

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194 Concept made by Via Campesina, in: Special Rapporteur: Jean Ziegler, "The Right to Food" (E/CN.4/2004/10, February 9, 2004). Paragraph 25.

195 See for example: UN Declaration on the Rights of Indigenous Peoples, adopted in September 2007; Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security.

196 UN Committee on Economic, Social and Cultural Rights (CESCR), "GC No. 12: The Right to

In addition, the SR on the right to adequate food, in exercise of its expert authority, has defined more extensively the right as:

> "The right to have regular, permanent and free access, either directly or by means of financial purchases, to quantitatively and qualitatively adequate and sufficient food corresponding to the cultural traditions of the people to which the consumer belongs, and which ensures a physical and mental, individual and collective, fulfilling and dignified life free of fear"[197].

b. Core elements

As indicated, "everyone" is considered as bearer of this right, as we will see further developed in Chapter 7.A.

From the two definitions presented, three fundamental elements appear as constitutive of the right, namely (1) *availability*, (2) *accessibility* and (3) *adequacy*.

First, food must be *available* from subsistence production or through a well-developed distribution system that responds to the food demands[198]. It must be also *accessible* to everyone (with special attention to vulnerable groups of people), not only physically but also economically, which has particular relation with the acquisition of food in order to satisfy an adequate and nutritious diet[199]. Furthermore, food accessibility is further related

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Adequate Food (Art. 11 of the Covenant)," May 12, 1999. Paragraph 6.

197 UN Commission on Human Rights, "Report by the SR on the Right to Food" (E/CN.4/2001/53, February 7, 2001).Page 7, Paragraph 14.

198 UN Committee on Economic, Social and Cultural Rights (CESCR), "GC No. 12: The Right to Adequate Food (Art. 11 of the Covenant)". Paragraph 12.

199 Ibid. Paragraph 13.

to the concept of sustainability, precisely guaranteeing that food will be within reach also for future generations.

The abovementioned SR on the right to food emphasizes that access to land and the agrarian reform are also "key elements" of the realization of the right to food[200]. Consequently, the intensive production and exploitation of GMOs on a large scale may also affect the right to food if State does not take remedial actions[201].

Finally, the third and last element is *adequacy*. This includes aspects related to the dietary requirements for the full realization of the right to food[202]. The essential attribute here is that food should be safe, which implies:

> "free from adverse substances sets requirements for food safety and for a range of protective measures by both public and private means to prevent contamination of foodstuffs through adulteration and/or through bad environmental hygiene or inappropriate handling at different stages throughout the food chain; care must also be taken to identify and avoid or destroy naturally occurring toxins..."[203].

The cultural and consumer acceptability of these three components is essential[204]. In this regard, the Committee further establishes that any way to achieve the realization of adequacy

200 See: Chapter 7.3.b.

201 UN General Assembly, "The Right to Food" (A/57/356, August 27, 2002).Paragraph 31.

202 GC12Paragraph 9.

203 Ibid. Paragraph 10.

204 Ibid. Paragraph 11.

must be also sustainable and must not interfere with the realization of other HRs[205].

In its report, the SR shows a strong relationship between the right to food and genetically modified plants, biotechnology and the food industry. It states that "[t]hese developments [GMOs] have had a direct impact on access to food, the suitability of food and public health…" In the same vein, it emphasizes the importance of the food safety[206]. Moreover, it focuses specifically in its strong relation with the right to health when stating that "…the use of genetically modified organisms (GMOs) in agriculture arouses fears regarding their possible effects on the human body…"[207] This last affirmation suggests the strong relation between GMOs and the possible affectation of food adequacy, and eventually, as a consequence, of the right to health.

Finally, even though the three elements of the right to food are crucial, the dimensions of sustainability and safety are decisive. The first one relates to the intensive production and the exploitation of GMOs on a large scale; and the second to the use of agrochemicals, resulting in the affectation of the adequacy of food.

205 Ibid. Paragraph 8.

206 UN Commission on Human Rights, "Report by the SR on the Right to Food." Page 22, Paragraph 73.

207 Ibid. Page 22, Paragraph 73.

5) OTHER RIGHTS: A BRIEF EXPLORATION

1. The right to water

The right to water is intrinsically connected with the right to health and the right to adequate food[208], insofar water is extremely important for agriculture and the rights that surround the realization of the activity[209].

a. Water and sanitation: legal foundations

The rights to water and to sanitation have always been treated together, however, from the 15th December 2015, both are considered independent HRs[210]. First, the legal recognition of the right to water is made explicit on the followings treaties: the CEDAW[211], the CRC[212], the CRPD[213], and it also is implicit on the ICECSs under Art. 11 and Art.12, and the ICCPR Art. 6 on the right to life. Besides, its explicit character has been recognized by regional instruments and UN resolutions, the UN General Assembly Resolution N° 64/292 of 28th July 2010 being the most important, followed by its acknowledgement by UN HRs Council Resolution N°15/9 dated 30th September 2010. Both state that water and sanitation are fundamental HRs. Argentina was part of the adoption of both resolutions, but here the nor-

208 UN Committee on Economic, Social and Cultural Rights (CESCR), "GC No. 15: The Right to Water (Arts. 11 and 12 of the Covenant)" (E/C.12/2002/11, January 20, 2003). Paragraph 3.

209 UN SR Catarina de Albuquerque, "Realizing the human rights to water and sanitation: a handbook.," 2014. Introduction. Page 38 .

210 UN General Assembly A/RES/70/169, 22 feb 2016.

211 CEDAW. Art. 14 (2)(h).

212 CRC. Art. 24 (2).

213 CRPD. Art. 28 (2) (a).

mative recognition of these rights dates back to 1997 when, in the context of a judicial case regarding water pollution,the right to clean water was recognized as part of the right to health and to a clean environment[214].

b. Definition and elements

The UN Committee of ESCRs developed the legal content of the right to water (under Art.11 and 12) in GC No. 15[215]. It is defined as the right that everyone has "to sufficient, safe, acceptable, physically accessible, and affordable water for personal and domestic use"[216]. In this definition, some specified elements appear: (1) *adequateness*, which is the condition for health, life and dignity[217]; (2) continuity and sufficient *availability*[218]; (3) physical and economic *accessibility*[219], and (4) the *quality* of water, including it being free from adverse substances, microorganisms, or/and chemical substances, which is a fundamental pre-condition to the realization of other rights[220].

A recent study (2017)[221] has shown the presence of pesticides at a dangerous level for aquatic life along the entire course of the Paraguay and Paraná rivers, mainly accumulated in the

214 Menores Comunidad Paynemil s/acción de Amparo, Cámara de Apelaciones en lo Civil de Neuquén, Sala II- Expte. No. 311-CA-1997, 19 May 1997.

215 GC15.

216 Ibid., Paragraph 2.

217 Ibid., Paragraph 11.

218 Ibid., Paragraph 12*(a)*.

219 Ibid., Paragraph 12*(c)*.

220 Ibid., Paragraph 12*(b)* and Paragraph 1.

221 Etchegoyen, M., Ronco, A., Almada, P. et al. Environ Monit Assess *(2017)* 189: 63. https://doi.org/10.1007/s10661-017-5773-1

sediments, but also present in the water. Among other pesticides endosulfan has been found which has been banned in Argentina from 2012. Another study (2016)[222] has demonstrated that the Paraná River account is highly contaminated with glyphosate or AMPA, its degradation (metabolite). The study also showed that the highest glyphosate contamination corresponds to the Luján River as well as the sections of the Paraná which include the provinces of Santa Fe and Entre Ríos. This is a direct consequence of the agricultural activities that are carried out in all that area of the country. The concentrations of these compounds are particularly high in the sediments of these rivers, which act as "sinks" where they accumulate over time. Its presence in the water, on the contrary, indicates its immediate use and its arrival in the rivers and streams of the Paraná basin.

The pollution of the rivers of the Paraná-Paraguay basin exposes the population that uses them to obtain drinking water, for fishing or for simple recreation at increasing and risky amounts of agrochemicals, adding to the tragedy of the fumigated villages of the region. In addition, it affects the biodiversity of one of the largest wetland systems in the world[223].

2. The right to a healthy environment

a. The key for the realization of HRs

The quality of the environment is a key concern for the realization of the most fundamental HRs.

Three aspects reveal its importance and its relation to other

222 Ronco, A.E., Marino, D.J.G., Abelando, M. et al. Environ Monit Assess (2016) 188: 458. https://doi.org/10.1007/s10661-016-5467-0

223 Available at: www.laizquierdadiario.com.ar

HRs. First, the environment acts as a precondition for the realization of many fundamental rights, especially the rights to life, health and food which may be highly affected if the environment is polluted. Second, it is related to the realization of the rights to information, participation in public affairs and the access to justice, which all are crucial to a good management of the environment. At last, the economic public policies should be integrated inside the concept of sustainable development and social justice[224]. In particular, the Committee indicates the obligation to adopt this last approach with the purpose of guarantee the environmental hygiene, the right to adequate food and ensuring that food does not contain adverse substances that could affect human health[225].

Furthermore, the concept of sustainability is closely connected with food security[226]. Looking in particular at the relation between the quality of the environment and the right to health, the determinants indicated in GC No.14 are a healthy occupational and environmental conditions[227] and the healthy environment as precondition to prevent diseases[228]which also oblige the States to avoid practices that affect the environment such as *"unlawfully polluting air, water and soil"*[229], encourage them to adopt measures against environmental hazards and to

224 UN General Assembly, "Analytical Study on the Relationship between Human Rights and the Environment" (A/HRC/19/34, December 16, 2011).Paragraphs 6-10.

225 UN Committee on Economic, Social and Cultural Rights (CESCR), "GC No. 12: The Right to Adequate Food (Art. 11 of the Covenant)". Paragraphs 8 and 10.

226 Ibid. Paragraphs 7 and 8.

227 GC14. Paragraphs 11 and 15.

228 Ibid. Paragraph 16.

229 Ibid. Paragraph 34 and 35

implement policies which reduce environmental adverse substances that may affect health.

b. Legal foundations

Even though the 1972 Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration)[230] is a key point from where the legal protection of the environment was expanded to nationals and regional recognitions, such as the Protocol of Salvador[231] and the ACHPR[232], the legal foundation of the environmental protection also had already been recognized in specific HRs treaties[233].Nonetheless, positive steps taking by the States in incorporating the environment in their National Constitutions have been crucial in the legal protection of the environment[234]. This is a great step, because the highest and strongest national law is definitively across countries the most effective tool to protect the environment[235].

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230 "Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations"- Stockholm Declaration *(*Declaration of the United Nations Conference on the Human Environment*)*, 1972, UN Doc. A/Conf.48/14/Rev.1..

231 Art. 11.

232 Art.24

233 e.g. Convention on the Right of the Child Art.24.2*(c)*

234 See*:* UN Economic and Social Council, "Report of Further Developments in Fields with Which the Sub-Commission Has Been Concerned Human Rights and Environment. Final Report by Mrs. Fatma Zohra Ksentini, SR" *((*E/CN.4/Sub.2/1994/9*)*, July 6, 1994*)*.,paragraph 241 and UN General Assembly, "Analytical Study on the Relationship between Human Rights and the Environment."

235 A vast jurisprudence in the topic may be found in the web page of the UN SR on Human

c. Argentine legal foundations

In the case of Argentina, the 1994 Constitutional reform incorporated in Art.41 an environmental legal framework protection from where national laws and regulations, provincial constitutions and laws used in a later development[236].

The principle of sustainability and the preservation of natural resources - especially the biodiversity- are the core of Art. 41 as well as the human health and the protection of the environment. The article signals also that the access to information and education are key elements to fully guarantee a healthy environment and specifies the importance of the general national legislation which establishes the foundations in where local legislation develops their own normative framework. Based on this article several national legislations devoted to specific environmental topics[237].

Rights and the Environment: John H. Knox. www.srenvironment.org

236 Art.41 NC "[a]ll citizens have the right to a healthy, balanced, and appropriate environment for the human development and to the environmental productive activities to be able to satisfy the present needs without compromising those necessities of future generations; and they have the duty to preserve it. The environmental damage generates with priority the obligation to repair, as the law shall establish. The authorities shall provide for the protection of this right, the rational use of the natural resources, the preservation of natural and cultural heritage and the biological diversity, and the environmental information and education. Correspond to the Nation to promulgate rules containing the minimum protection and to the provinces those necessary rules to reinforce them, without altering those National norms their local jurisdictions. It is banned the entry into the national territory of present or potentially hazardous waste and radioactive".

237 General Environmental Law-Act 25.675, and other particular legislation on the matter such as the Integral Industrial Waste Management and Service Activities Law No.25.612, Law for the

An important aspect of the principles indicated in the National General Environmental Law No. 25.675 is noteworthy. Art.4 institutes the following principles as core to the environmental framework: principle of consistency, principle of prevention, precautionary principle, principle of intergenerational equity, principle of progressivity, principle of responsibility, principle of subsidiarity, principle of sustainability, principle of solidarity and principle of cooperation.

All in all, the purpose of the law is to set the minimum standards for achieving a sustainable and adequate management of the environment, its preservation and the protection of biodiversity, as well as the implementation of sustainable development. In addition, it establishes the parameters that the national environmental public policies must fulfil[238]. In this sense, the principles are the basis for the interpretation and application of the law, as well as of other rules by which environmental policies are executed[239].

3. The right to information

The statement given by the Special Rapporteur on the implications of the environmentally sound management and disposal of hazardous substances and wastes for HRs summarizes the

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Management and Disposal of PCB`s("Poly Chlorinated Biphenyls")-No.25670 and the Environmental Management Water Law-No.25.688,Law on Free Access Regime wing Environmental Public Information, No.25.831, Law on Household Waste Management No.25.916 and the Law on minimum environmental protection of Native Forests No. 26. 331.

238 See: Act 25675, Art 2.

239 This national law has been crucial in various claims in the matter presented before the Argentinian Justice. See Part III.Chapter 7, 2.a.

issue: "[p]eople have a right to know whether they are being exposed to hazardous substances"[240]. As the Economic Commission for Europe sustains, people are not yet well informed about "the quality of their drinking water, the air they breathe, the land they live on and the food which they receive"[241]. As it can be seen these crucial concerns are constitutive of the right to information.

a. Legal Foundations

The legal foundation of the right to information can be found in the ICCPR, which is a treaty legally binding to Argentina[242]. The right to freedom of expression established by Art.19 (ICCPR) and the right to be part in public affairs under Art.25 (ICCPR) presuppose the right to information as part of their legal content[243]. This is also recognized in several regional treaties[244], as

240 UN Human Rights Council, "Report of the SR on the Implications for Human Rights of the Environmentally Sound Management and Disposal of Hazardous Substances and Wastes, Addendum: Mission to Kazakhstan" (A/HRC/30/40/Add.1, September 15, 2015)., Paragraph 97.

241 Economic Commission for Europe(ECE), "Meeting of the Parties to the Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters" (ECE/MP. PP/2014/27/Add.1–ECE/MP.PRTR/2014/2/Add.1, September 16, 2014).Paragraph 16.

242 See: Argentine National Constitution. Art. 75, paragraph 22.

243 See: UDHR Art.19; the CRC Art.13.1.

244 For illustration: The American Convention on Human Rights, "Pact of San José", 22 November 22 1969 (Article 13), Inter-American Declaration of Principles on Freedom of Expression, Inter-American Commission on Human Rights, 108th Regular Session, 19 October 2000 (preamble, Principle 3 and 4);Model Inter-American Law on Access to Information, June 7, 2011, Organization of American States; Principles on the Right of Access to Information, OAS, CJI/RES. 147 (LXXIII-O/08), 7 August 2008;Resolution on Access to Public Information: Strengthening Democracy, OAS General Assembly, AG/RES. 2514 (XXXIX-O/09), 4 June 2009; African Charter

well as National Constitutions. Particularly important to mention is the Dubai Declaration on International Chemicals and the Overarching Policy Strategy in the context of the International Conference on Chemicals Management from 2006, where the parties declared that the interested parties should "facilitate public access to appropriate information and knowledge on chemicals throughout their life cycle, including the risks that they pose to human health and the environment"[245].

The right to information has constitutional hierarchy in Argentina since 1994, not only because of the incorporation of the HRs treaties into Art.75 paragraph 22, but also due to the particular prominence of consumer rights and the right to health[246]. Said article has been completed by a special Act Nr.

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on Human and Peoples' Rights, OAU Doc. CAB/LEG/67/3 rev. 5, 21 I.L.M. 58 (1982), 27 June 1981 (Article 19); Convention for the Protection of Human Rights and Fundamental Freedoms (ECHR), Council of Europe, 4 November 1950 (Article 10).

245 Dubai Declaration on International Chemicals Management, the Overarching Policy Strategy and the Global Plan of Action. Paragraph 21 (International Conference on Chemicals Management- Strategic Approach to International Chemicals Management).

246 Argentine National Constitution. Art 42: "Consumers and users of goods and services have the right, in the ratio of consumption to the protection of their health, their security and economic interests; to an adequate and accurate information; freedom of choice and to conditions of fair and decent treatment. The authorities shall provide for the protection of these rights, the education for the consumption, the competition from all forms of market distortion, the control of the natural and legal monopolies, the quality and efficiency of public services, and the establishment of associations of consumers and users. Legislation shall establish efficient procedures for conflict prevention and resolution, and regulatory frameworks of public services of national competence, providing the necessary participation of consumer and user associations and interested provinces in the control bodies".

24.240, which provides a full development of the rights implicated in this matter and the full list of the stakeholders obliged[247].

b. Content related with hazardous substances

The content of the right to information related with hazardous substances has been settled by the SR on the implications of environmentally sound management and disposal of hazardous substances and waste for HRs [248]. It specifies four elements: availability, accessibility, functionality, and non-discrimination. In addition, the SR on the promotion and protection of the right to freedom of expression has affirmed that the right to information encompasses two dimensions: the right to have access to public information, as well as the right of individuals to request and receive information of public interest and which is concerning themselves or may affect their individual rights[249].

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247 Some articles are related directly with the topic in question: Art. 2- People forced of compliance are: "the natural or legal persons, public or private, who professionally and even occasionally develop activities of production, assembly, creation, construction, transformation, importation, trade mark registration, distribution and commercialization of goods and services intended for consumers or users. Every supplier is obliged to comply with this law..." Art 4 - Information. "The supplier is required to supply to the consumer as certain, clear and detailed everything about the essential characteristics of the goods and services it provides, and the conditions of their marketing...". Art. 5-Consumer Protection. "Things and services must be supplied or rendered in such a way that used normally do not present any danger to the health or physical integrity of consumers or users.

248 UN General Assembly, "Report of the SR on the Implications for Human Rights of the Environmentally Sound Management and Disposal of Hazardous Substances and Wastes, Baskut Tuncak" (A/HRC/30/40, July 8, 2015). He presented a report on right to information to the thirtieth session of the Human Rights Council.

249 A/68/362, paragraph 19, 4 September 2013.

c. Confidentiality and Intellectual Property Rights in the full realization of the right to information

States have also important obligations specifically regarding the right to information and its relationship with hazardous substances. For example, following the SR[250], the State should assess, generate, collect, and be especially attentive to continuing innovation in the development of new information, scientific knowledge, etc. regarding hazardous substances and their consequences, as well as keep it regularly and systematically up to date. In addition, it is the duty of every single State to "effectively disseminate information to everyone who may be adversely affected by the production, storage, use, release and disposal of hazardous substances and wastes"[251]. This information may be given to any legal or natural person, public or private, including consumers. In this context, it is also particularly important to identify groups at risks or with particular needs, and to disaggregate the information with the purpose of being effective in its communication[252].

Lastly, States must ensure that the confidentiality of some information is under the principle of legitimacy. This means that the right is not absolute[253]. Hence, any protection of confidentiality provided by a prior law must go hand in hand with

250 UN General Assembly, "Report of the SR on the Implications for Human Rights of the Environmentally Sound Management and Disposal of Hazardous Substances and Wastes, Baskut Tuncak." 8 July 2015.

251 Ibid. Paragraph 61.

252 See also Chapter 4. A)3.3 (last paragraph).

253 UN Human Rights Council, "Report of the SR on the Promotion and Protection of the Right to Freedom of Opinion and Expression, Mr. Frank La Rue" (A/HRC/14/23, April 20, 2010).Paragraphs 72-87.

the protection of the reputation of others, the public order, as well as public health and moral[254]. Indeed, the SR states that, in regard with hazardous substances, "it is not legitimate to protect a competitive advantage of businesses that create risks to public health and other public interests"[255]. Namely, the right to confidentiality is left with no effect when it interferes with matters of health, safety, and serious HRs violations[256]:"the refusal to disclose information because it would adversely affect the value of intellectual property or the confidentiality of commercial businesses or industrial information is not legitimate if it may hamper public health or the overall public interest" [257].

The issue of intellectual property – another related controversial topic in this regard – was discussed in a well-known case on the EU. The solicitant asked for the annulment of the European Commission decision dated 10th of August of 2011, by which the applicants were denied access to certain documents containing the first authorization for marketing the active sub-

254 UN General Assembly, "International Covenant on Civil and Political Rights" (Treaty Series, vol. 999, p. 171 United Nations, December 16, 1966).Art.19.3. See also: Joseph,S. and Castan, M., The International Covenant on Civil and Political Rights, Third edition (UK: Oxford, 2013). Pages 604-624.

255 UN Human Rights Council, "Report of the SR on the Implications for Human Rights of the Environmentally Sound Management and Disposal of Hazardous Substances and Wastes, Baskut Tuncak."Paragraph 45. See also: Agreement on Trade-Related Aspects of Intellectual Property Rights: Art. 7,8,39(3).

256 UN General Assembly, "Report of the SR on the Promotion and Protection of the Right to Freedom of Opinion and Expression." (A/68/362, September 4, 2013). Paragraph 37.

257 A/HRC/30/40, paragraph 45. See also: Agreement on Trade-Related Aspects of Intellectual Property Rights, arts. 7,8,39(3).

stance glyphosate. The general Court settled that "...it must disclose it where the information requested relates to emissions into the environment, even if such disclosure is liable to undermine the protection of the commercial interests of a particular natural or legal person, including that person's intellectual property..."[258]. In the same vein, the Agreement on Trade-Related Aspects of Intellectual Property Rights, in Art.39.3 states that:

> "Members, when requiring, as a condition of approving the marketing of pharmaceutical or of agricultural chemical products which utilize new chemical entities, the submission of undisclosed test or other data, the origination of which involves a considerable effort, shall protect such data against unfair commercial use. In addition, Members shall protect such data against disclosure, *except where necessary to protect the public health*"[259].

In a normative text, there are right-holders and duty-bearers who have legally binding obligations which engender legal responsibility in case of interferences between the realization of the right and the non-compliance with obligations by the duty-bearer. This is what the next section analyzes: The general obligations of the Argentine State of guaranteeing the full realization of the abovementioned HRs through agricultural public policies, and its particular obligations in light of the content of the right to health and the right to adequate food.

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258 Stichting Greenpeace Nederland and Pesticide Action Network Europe (PAN Europe) v. European Commission, case T545/11, Judgement of the General Court (Second Chamber) of 8 October 2013, paragraph 38.

259 Emphasis added.

PART III: OBLIGATIONS ADOPTED BY ARGENTINA

Special reference to interferences with the right to health and the right to adequate food in the use of pesticides and transgenic production

6) GENERAL OBLIGATIONS

1. Argentine public policies

The public policy-orientation works as an umbrella or long-term structural framework under which a State develops its functions through various specific policies[260]. In Argentina, the national agricultural policy is embodied mainly by the "Agri-food and Agrobusiness Strategic Plan 2010-2020" (AASP). It is closely interweaved with the economic development model of the country. The focus of this plan is the increase in production, productivity, and competitiveness of all sectors of agroindustry, as well as the improvement of related research and development through specialized organisms. It foresees an increment in production of 160 million of tons by the end of the period, from which 40 million tons are soy, maize, wheat and sunflower.

260 Akindele, S.T. and Olaopa, O.R. A Theoretical Review of Core Issues on Public Policy and its Environment). Hum. Ecol., 16(3): 173-180 (Department of Political Science, Obafemi Awolowo University, Ile-Ife, Osun State, Nigeria -2004) Page 174-175.The author differentiates 4 hierarchies' levels of public policies:1. politic policies,2. executive policies,3. administrative policies and 4. technical policies.

Expected also is an increment of 58% in the production of grains and an expansion of 27% in terms of the sown area. Moreover, the goal is the proliferation of the volume of food production for export by 153%[261].

Directly related to the above are tax-policies regarding primary products and commodities. Former president Mauricio Macri issued an executive decree in 2015 suppressing export taxes for wheat, maize, meat and regional products[262]. It rules also a 5% reduction in the soya export tax, which was until then set at 35%, and thereafter further reduced at a rate of5 % per year in the following 4 years, leaving it at the current XX%[263]. In addition, export taxes for all organic products were also suppressed.[264]

From the reading of both measures together, it could be though that the government is trying to balance both agricultural ways. However, both may be mutually incompatible when there is not a proper plan that propitiates an adequate development of organic production, considering that the latter needs specific

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261 The figures and data were taken from the official AASP, and Magnasco, M.E and Di Paola, M. Agroquímicos en Argentina ¿Dónde estamos? ¿A dónde vamos?, in: Annual Inform of FARM-2015- Pages 147-163.

262 Exportation Rights Decree 133/2015-(16/12/2015). The purpose of this measure is "reversing the negative indicators of Argentina's economy, including concrete actions to overcome the agricultural crisis and revive the sector by removing barriers and restrictions that currently limit their ability, while the natural capital of our soils is favored and cared".

263 Ibid.

264 Exportation Rights Decree 361/16-(16/02/2016) Its main objective is the development of food quality through the application of techniques and use of inputs to ensure the preservation of the environment, ensuring the sustainability of the production system.

conditions that are generally overridden by agro-industrial development. For illustration: transgenic crops present the issue of expansion due to pollination, the use of agrochemicals which may contaminate soils and even groundwater, and these issues are difficult to counteract. At the same time, organic production requires the fulfillment of strict conditions, among others, the use of unpolluted soils around the production area, as well as the use of water free of chemicals–all of which must be controlled by certifying enterprises–[265]. Thus, the strategy of expanding organic production should be accompanied by an integral plan of action which takes into account all the relevant economic, social, environmental aspects, and even a land-use regulation which includes adequate incentives to counter the disbalances produced by the prevailing system. Hence, to satisfy the international market for commodities and primary products, as well as the targets or benchmarks in AASP 2020 under present conditions, agriculture is forcefully to be industrialized.

In addition, after Macri became president, the agency in charge of carrying out the design and execution of production, commercialization, and health plans in the agricultural, fishing, forestry and agro-industrial sectors was renamed as the Ministry of Agribusiness, leaving behind its prior name of "Ministry of Agriculture, Livestock, Fishing and Agroindustry". This simple fact denotes the state focus on agroindustry.

In this regard, the Committee requires of States that they indicate the basis on which all the measures taken are considered the most appropriate under the economic, social and financial

265 Act Nro.25.127/99, Decree 206/2001, Resolution 423/92.

circumstances[266], the covenant having a neutral position regarding the political and economic orientation of the State concerned[267].

2. General obligations

The tripartite typology of responsibility of States, applicable to all HRs, is of particular importance in the area of ESCs[268]. It carries obligations of conduct –adopting national strategies or formulating public policies– as well as output obligations, namely achieving the benchmarks set in the plans and strategies[269]. In this sense, Art 2.1 of ICESCR provides a general framework appropriate to the rights included therein:

> "Each State Party to the present Covenant undertakes to take steps, individually and through international assistance and co-operation, especially economic and technical, to the maximum of its available resources, with a view to achieving progressively the full realization of the rights recognized in the present Covenant by all appropriate means, including particularly the adoption of legislative measures".

Making use of its authority, the Committee interprets this

266 UN Committee on Economic, Social and Cultural Rights (CESCR), "General Comment No. 3: The Nature of States Parties' Obligations (Art. 2, Para. 1, of the Covenant)" (E/1991/23, December 14, 1990). Paragraph 4.

267 Ibid., Paragraph 8.

268 Unlike ICESC, ICCPR purses the immediate realization of civil and political rights (Art.2.1 ICCPR).

269 Wenche, B.E. and Kracht, U, Food and Human Rights in Development, Evolving Issues and Emerging Applications, Intersentia-Antwerpen, vol. II (Oxford, 2007). Page 148.

article through its General Comments (GC). Additionally, the authority of the UN Special Rapporteurs is also crucial in terms of perfecting the authoritative understanding of each of the relevant rights.

A) The obligation of taking steps

The key word provided in Art.2.1 is to "take steps", which is interpreted explicitly in GCNo.3 as adopting measures, especially legislative measures. These sometimes are seen as "highly desirable" and in other cases as "indispensable". Apart from legislation, other appropriate measures (e.g., administrative, financial, educational and social) would be desirable with the goal of the full realization of each right. The list is non-exhaustive[270].

a. Legislative measures

i. National legislation

In the area of agrochemicals, Argentina does not have any specific and comprehensive national law to regulate the production, importation, exportation, transportation, storage, and use of agrochemicals. Instead, there are manifold disseminated decrees and resolutions regulating the issue[271]. The provinces have their own laws which rule the use of agrochemicals to varying degrees, protecting human health and the environment to a greater or lesser extent [272].This situation reveals that there is not any general

270 GC3.Paragraph 7.

271 See Chapter 3.2.a and Annex 3.

272 Buenos Aires Act N° 10.699/1998; Catamarca Act N° 4395/1986; Chaco Act No.7032/2012, Chubut Act No. 4073/1995, Córdoba Act No. 9164/2005,Corrientes Act No. 5300/1998, Entre Ríos Act No.6599/1980; Formosa Act No.1163/1995; Jujuy Act No. 4975/1996, La Pampa

national law providing guidance or a comprehensive framework to bind together the legal norms issued at lower jurisdictional level[273], in accordance with the subordination principle which structures the Argentine legal system.

With the purpose of compensating for this deficiency, some law projects have been presented to the national Parliament, but most of them have not transcended[274]. These projects seek to regulate the control and use of agrochemicals with the aim of protecting human health and the environment, albeit differing widely in important technical matters.

Unlike the case of agrochemicals, in *environmental matters* there are general national laws with minimum requirements for the provinces which are the basis to build on with more right`s guarantees. The precautionary principle, among others, is a cornerstone of the legal structure[275].

In the field of GMOs, the situation is similar to that of agrochemicals: several national regulations and several local legislations, but no national law imparting structuring principles. The

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Act No.1173/1988; La Rioja Act No. 9170/2011; Mendoza Act No.5665/1991; Misiones Act No.2980/1992; Neuquén Act No.1859/1990; Río Negro Act No. 2175/1987; San Juan Act N° 6744/1996; San Luis Act No. 5559/2004;Santa Cruz Act No. 2484/1998 and No.2529/1999; Santiago del Estero Act No. 6312/1996; Santa Fe Ley N° 11.273/1995;Tucumán Act No. 6291/1991.

273 Unlikely Argentina, the European Union as a legally binding legal framework where those principles must be respect by the members of the European Union (See Chapter 3).

274 For instance: No. 1824/05 (the project, after being approved in the Senate, was sent to the Chamber of Deputies, where it expired untreated 2 years later); No. 348D-98 | 1208-D-00;No. 5857-D-2010; No. 1302-D-2012; No.7180-D-2014. All are available at the official page: http://www.senado.gov.ar/parlamentario.

275 See Chapter 5.B.3 and legal cases in Chapter 7.2.b.

explanation of these divergences can be found at the level of international regulation, as will be shown in the following section.

ii. International legislation

Concerning GMOs, Argentina is party to the Convention on Biological Diversity, but has not ratified the Cartagena Protocol on Biosafety, where human health, the conservation and sustainable use of biological diversity and the precautionary principle operate as guidelines for legislation and national public policies at issue [276]. Another pending ratification is the International Treaty on Plant Genetic Resources for Food and Agriculture, in force since 2004[277].

To illustrate this, a Court of Appeals in the Philippines, in application of the precautionary principle, ruled that government ministries must cease and desist from conducting *Bt* GMO- field trials due to lack of certainly of its impact on human health and the environments, as well as because of the country having failed to adopt sufficient biosafety protocols and to undertake adequate studies of GMOs. The Supreme Court upheld its decision in September 2013[278].

With regard to pesticides, the Stockholm Convention has been ratified by Argentina. The fact that Argentina declared that each amendment to the annexes (where individual substances are incorporated to the treaty) needs to be approved in a separate act denotes the intention of relativizing the protection of health and

276 See Chapter 2.2.

277 FAO International Treaty on Plant Genetic Resources for Food and Agriculture 03 Nov 2001-In force 29 Jun 2004 (FAO-Rome B7 p. 2001:82). Argentina signed the treaty on 10th June 2002.

278 Greenpeace Southeast Asia (Philippines) v. Environmental Management Bureau of the Department of Environment and Natural Resources, CA-G.R. SP NO. 00013 (May 17, 2013).

the environment vis-à-vis other rights which could potentially be affected through the prohibition of a substance. This was the case of the incorporation of endosulfan[279].

In regard to international trade activities, Argentina is part of the following main international Conventions: the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade[280] and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal[281].

b. Other remedies

i. Judicial remedies

In addition to ordinary remedies, the NC offers special judicial tools which are extremely important to achieve a full rights protection[282]: the action of unconstitutionality[283], precautionary measures, and administrative complaints[284], among others. The national constitutional reform in 1994 added a specific type of action: The Amparo[285]. In Argentina this tool has been used in

279 See Chapter 2.3.1.

280 Argentina signed it on 11 Sep 1998 and ratified on 11 June 2004.

281 Argentina signed it on 28 June 1989 and ratified on 27 June 1991.

282 In this regard most of treaties rule the right to an effective remedy separately (E.g. ICCPR Art.2.3).

283 "Picorelli, Jorge Omar y otros c/ municipalidad de general Pueyrredón s/ inconst. Ord. Nº 21.296)" La Plata, 26 de septiembre de 2014. Corte Suprema de Justicia de la PBA.

284 Red de Salud Popular "Dr. Ramón Carrillo" Ministerio de Planificación y Ambiente de la provincia del Chaco.

285 Argentine National Constitution.(NC)(Art.43)- The Amparo is a legal resource against any act or omission exercised by public authorities or individuals which currently or potentially infringes, restricts, alters or threatens, with manifest arbitrariness or illegality, rights and guarantees

several cases in the form of "collective Amparo", especially in environmental matters[286]. All these tools must be presented and followed in the ordinary tribunals due to the absence of specialized tribunals on environmental issues[287].

One particular outcome of an *amparo* presented by the NGO *"Naturaleza de Derechos"* is especially worth noting here. The action had been filed against the SENASA, the national authority on food safety in Argentina, requesting a report about agrochemicals present in fruits and vegetables which are marketed through the Supply Markets of the City of Buenos, La Plata, and General Pueyrredón (Province of Buenos Aires). The

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recognized by the Constitution, Treaties or Laws. The action can be filed by the affected, the ombudsman, or by civil associations against all forms of discrimination and particularly with respect to environmental, competition, users, and consumer rights, as well as collective rights, in general. It is exceptional, and its goal is to provide immediacy in the judicial response.

For extended information, please, see: Bidart Campos, G. (1961) Derecho de amparo (Ediar, Buenos Aires), p. 34 and Maraniello, Patricio A. (2011) The Amparo in Argentina, its evolution, traits and special characteristics (IUS-Revista del Instituto de Ciencias Jurídicas de Puebla-AñoV, Nro 27) Pages 7-36.

286 Club de Derecho (Fundación Club de Derecho Argentina) y Otros c/ Municipalidad de Malvinas Argentinas s/ Amparo (Ley 4915) (No.218019/37) Cámara del Trabajo(Córdoba) (22 Feb de 2013); Cavigliano Peralta, Viviana c/Municipalidad de San Jorge y ots. s/Amparo" (No. 208/09) Juzgado de Primera Instancia de Distrito Nº 11 en lo Civil, Comercial y Laboral de San Jorge, Provincia de Santa Fe- (10 Jun 2009); Zambon, Carlos A. c/ Gomez, Oscar y otra s/ recurso de amparo ambiental (No. 620) Juzgado de Primera Instancia de Distrito en lo Civil y Comercial de la Séptima Nominación de Santa Fe-(2010); Monsalvo, Cristina y otros c/ Delaunay, Jorg es/ amparo (agosto 2012)- Corte Suprema de la provincia de Buenos Aires.

287 In the province of Buenos Aires, there is currently a law Project to create an Environmental Court. See at: http://www.ambiente.gov.ar/?idarticulo=3317

agency –-had kept absolute silence regarding the request made in the month of January 2017, leading to a judicial presentation before the Federal Administrative Contentious Court. Following this action, they decided immediately to provide the information requested, which unveiled alarming figures: around 63% of the fruits and vegetables examined presented agrochemical residues which were either larger in amount than the maximum established by law or even from banned agrochemicals[288].

Other countries, like Colombia, have used the "Popular Action", which is similar to the collective Amparo. In this case the Ministry of Environment was required to withdraw Monsanto's license to import transgenic cotton variety. The legal base invoked were the right to health, the right to a clean environment and biodiversity protection, all under the precautionary principle[289].

ii. Other tools

Institutions such as the ombudsman[290] allow for additional solutions and possibilities[291]. Making use of the Ombudsman's discretional faculty, Resolution 147/10 was issued recommending

288 See: "Heladeras Fumigadas Argentinas. Informe de datos del SENASA sobre Agrotóxicos en Vegetales. 2011-2016". Available at: www.naturalezadederechos.com

289 Acción popular /Hernán Arévalo Roncancio vs. La Nación Ministerio del medio ambiente, vivienda y desarrollo territorial Exp. No. 2003-00181-Tribunal administrativo de Cundinamarca Sección cuarta- -Sub Sección B- Bogotá D. C., 17 oct 2003.

290 NC Art.43, art 86.

291 This national body has the purpose of defending and protecting all the rights established in the legal system against acts or omissions perpetrated by the public administration as well as the control of their functions. With this purpose and representing the interests of the nation population, it may investigate, criticize, comment, dictate resolutions, receive complaints and also standing complains by *Motu Proprio*.

the modification of the toxicological classification of pesticides and also requesting the intervention of relevant specialized institutions to discuss the matter. Another recommendation in this regard (Res.101/11) has been issued before the prohibition of endosulfan in 2011[292]. Resolution 06/12 is also important: here the ombudsman recommends to the National Health Minister the execution of measures ordered by Decree 21/09, which creates the National Commission on Agrochemicals Research (NCAR). It also states the relationship between agrochemicals and acquired pathological disabilities and demands the application of the precautionary principle established in the environmental legislation[293].

Another important national organism which has been specifically involved in matters involving pesticides and GM crops is the National General Auditor's Office (AGN)[294]. A review made at the National Agricultural Technology Institute (INTA)[295] analyzed the growth of production in regional farming and the sustainability of the soybean crop for the period 2002-2005, concluding -among other things- that the State is absent in the expansion

292 Dávila, M. La política sobre uso de agroquímicos en Argentina y Uruguay *(*Universidad de Belgrano- Departamento de Investigaciones- Área de Estudios Agrarios-2012*)*.

293 Resolution 06/12 25 January 2012.

294 NC, Art.85- It has a fundamental role in the external control and the activities of the centralized and decentralized public administration, whatever its forms of organization. In this function, it has the attribution of petitioning information and explanations about specific matters to other organisms.

295 Created by Decree/Law No. 21.680/56. Its main function is to promote and to strength the development of researching of agricultural enterprise and rural life throughout the country, taking into account, inter alia, problems related with natural and production engineering resources.

of the agricultural frontier, resulting in the lack of any measures for the control of environmental impact and of legislation and rules in the matter.

In another audit, the performance of the *DNAPVyA*[296]regarding the registration, authorization and/or restriction of agrochemicals was evaluated for the period between January 2008 and June 2011. Its conclusion reflects strong concerns:

> "It is important that the State has its own scientific production on the subject and does not depend on the information submitted by interested parties. In the context of the increasing use of agrochemicals, and given that the DNAPVyA is responsible for approving the products applied in the country, it cannot avoid the adoption of a preventive approach, as the activity at stake is directly related to public health [...] In the case that producers persist in the irresponsible use of agrochemicals, with the subsequent harm to public health, the precautionary principle should be taken into consideration [...] Agrochemical pollution ends up becoming a form of silent poisoning, insofar repeated and long-term exposure -that is, chronical toxicity- causes damages and/or death[297]".

The report further states that the area covered by transgenic crops subject to systematic fumigation is of 22 million hectares, home to 12 million people, without counting the population of

296 See attributions in Annex 3.

297 AGN (National General Auditor's Office) report approved by Resolution. 247/12. (2012) Auditable management of the National Agricultural Chemicals, Veterinarian Products and Food (DNAPVyA)- National Service of Health and Agri-Food Quality (SENASA) in the registration, authorization and / or restriction of agrochemicals -Pages 29,30 and 31 (my translation).

large cities in each province. Hence –so the report– SENASA must "accompany these changes with a periodic review of the registered products and ongoing monitoring of the effects of chemicals on the environment and on human health"[298]. However, appropriate measures of control have not been taken in any of the stages, from the application of agrochemicals, through their effective transportation, storage and disposal"[299].

iii. Public programs

The availability of public programs with educational and/or informational purposes are key factors for guaranteeing human rights. However, the public administration does not fund any programs on agrochemicals or on GMOs. This vacuum is sometimes filled either by non-governmental organizations or by the action of self-organized communities. In the case of Malvinas-Córdoba (2013), an neighbors' assembly was established with the purpose of holding a blockade against the transgenic corn factory of the corporation Monsanto. Even though the purpose of this action was not primarily educational, it proved extremely significant in raising public awareness about GMOs, agrochemicals (especially Glyphosate), and the activities of Monsanto[300]. Other emblematic activities were taken by the Mothers of Ituzaingó Anexo Neighbor (2001)[301], Montecristo (2004), Mendiolaza (2005), San Francisco (2005) or in the province of Santa Fe like in Las Petacas (2004) and San Justo (2005).

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298 Ibid-Pages 29,30 and 31.

299 Ibid-Pages 29,30 and 31.

300 See more at: http://www.lavaca.org/notas/malvinas-argentinas-que-parte-del-no-es-la-que-no-entiende-monsanto/ *[last entry:2/2/2016-11:55a.m.]*

301 See at: http://madresdeituzaingo.blogspot.de/

Despite the fact that a couple of public programs have been created with the purpose of identifying and studying risk factors for the population and monitoring pesticide poisoning throughout the national territory (i.e. the national program for prevention and control of pesticide poisoning[302]and the NCAR[303]), they have remained almost inactive from 2010, as confirmed by an AGN-report[304].

The Ministry of Agroindustry has launched a core campaign to incentivize the general population to consume "vegetables and fruits", including a series of videos with recipes, and some texts with vague explanations about the benefits of the advertised products[305]. Whatever its communicational flaws and shortcomings, at first glance, this action seems well-suited to promote healthy dietary habits. Paradoxically, however, the otherwise healthy properties of the fruits and vegetables advertised are overcompensated by the damaging impact of the pesticide residues[306] that they contain. In addition, this action is only disseminated through the ministry's website, as a result of which it only reaches few people who have access to the internet[307] and are

302 Ministry of Health Resolution 276/2010 - 9 Feb 2010.

303 Decree 21/2009 -16 Jan 2009.

304 AGN National General Auditor's Office report approved by Resolution 247/12(2012) Auditable management of the DNAPVyA and SENASA in the registration, authorization and / or restriction of agrochemicals.

305 Available at: https://www.agroindustria.gob.ar/masfrutasyverduras/

306 Please see Part III, Chapter V.2.b.i.

307 According to data that emerged from the report on the state of broadband in Latin America and the Caribbean 2016 of the Economic Commission for Latin America and the Caribbean (CEPAL), in Argentina approximately 69.4% of people have access to the Internet (See:United

aware of its existence, thus in breach of the right to information.

B) The obligation of using the maximum available resources

The second part inside Art.2.1 refers to the extent of mandatory measures that the State must take : these must be undertaken using up unto the "maximum of its available resources", which means that all the existing means and the highest efforts ought to be applied in order to fulfill these state obligations, in particular those considered core obligations[308].

Two types of resources are relevant to this end: economic and human's resources. Regarding the former, the question arises on how much money or what percentage of the budget is destined to the realization of the HRs under consideration. There has been an observed increment in the public expenditure on health[309] and on programs destined to achieve food security[310]. In addition, other programs exist within the Ministry of Agroindustry with the purpose of training skills in agriculture and of strengthening agro-industrial ventures for the rural youth[311]. Regarding the development of family agriculture, however, despite having

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Nations CEPAL(2016) LC/W.710/Rev.1).

308 GC3.Paragraph 10.

309 From 6.3% to 7.3% of Gross Domestic Products-Period 2011-2013.

Available at: http://datos.bancomundial.org/indicador/SH.XPD.TOTL.ZS

310 The Ministry of Social Development expects an increment of the 18.4% to the budget of 2016 -in comparison with the amount of 2015-with the purpose of carrying out, among other matters, the National Plan of Food Security (PNSA). This program includes 4 branches: Nutritional Education, Pro-Huerta(orchard), Community Approach. For more information, see at: http://www.desarrollosocial.gob.ar/alimentacion.

311 Both programs – EscuelAgro and AgroEmprende–can be seen at: https://www.agroindustria.gob.ar/sitio/areas/ss_desarrollo_territorial/

a specialized organism within the Ministry of Agroindustry, its relevant instruments are more informative than programmatic[312]. As highlighted in the initial section of this chapter, it is evident that the overarching direction of public policy is focused on the expansion of agroindustry. This orientation, given its exclusionary nature, results in inherent inconsistencies, rendering the existing programs both inconvenient and impedimentary to development.

Regarding human resources, the issue comprises both the existence of competent institutions and the availability of sufficient personnel for their functioning[313]. The two reports named above from the AGN show an absence of enough personnel in the different areas of SENASA, as well as a lack of experts in the matter.

a. International cooperation or assistance

Art.2.1 establishes that if the State is not able to deal with its obligations because of the lack of resources, then the State should ask for international cooperation or assistance, especially from a technical and economic perspective. If this is the case, now the question arises under which conditions the cooperation would take place and who would be held responsible: individual States, regional organizations, international organizations, or specialized agencies such as the WB. This issue falls beyond the scope of this work, and thus shall not be analyzed. However, an illustrative example should suffice to provide an insight into the possible conflicts arising from such cooperation. In 1990, the WB approved a grant for the food-security-oriented State-program

312 For more information, please see at: https://www.agroindustria.gob.ar/sitio/areas/ss_agricultura_familiar/

313 The accomplishment of the labor law about the job conditions is setting aside in this work.

Pro-Huerta[314]; however, in 1999 the program-budget suffered a big reduction by the State which threatened the right to food of its beneficiaries. In this context, a claim was presented to the sub-regional office in Buenos Aires alleging a violation of the right to food (Art.11 ICESC and its GC12). Because of the inaction of the office, the claim was elevated to the Inspection Panel, who stated that agents of the WB local office had failed to deal with the damage that the budgetary reductions of the project had caused. Additionally, the Inspection Panel demanded the postponement of the pending loan payments to Argentina until the government restored adequate funding to the program. The Panel visited Argentina in 1999 and made a report with some structural changes to the loan[315].

The mention of this case is to note the existence of other available remedies to protect ESCs and how political decisions may indirectly affect and violate HRs.

C) The obligation of the progressive realization of the rights

Art.2.1 sets out that States the full realization of the rights of the Covenant should achieved progressively. It means that the strict performance of this obligation is not immediate and depends on the actual capability of the country in question to

314 Pro-Huerta is a program with the goal of the development of self-production of vegetables to families on vulnerability situation. Resources and trainings are given by the State. The program was approved on August 3 1990 under the INTA Resolution 239/90 Available at: http://www.desarrollosocial.gob.ar/prohuerta

315 See: Report and Recommendation on Request for Inspection, Re: Argentina - Special Structural Adjustment Loan 4405-AR (Pro-Huerta Case) Available at: https://www.escr-net.org/node/364789; The Inspection Panel "Report and Recommendation on Request for Inspection" Re: Request for Inspection - ARGENTINA: Special Structural Adjustment Loan (Loan 4405-AR).

gradually achieve complete compliance with its international duties. Although this feature conditions the immediate and full realization of ESCs , it also implies that the States have a responsibility to move "as expeditiously and effectively as possible towards the goal"[316][317]. Furthermore, alongside the process towards a full realization of ECS rights the achievement of the minimum core obligations with immediate realization should always be guaranteed, as should the principle of non-discrimination.

Due to the difficulties posed by the "progressive character" of State actions, the latter should offer structural, process and outcome indicators with the purpose of framing criteria to be followed and fulfilled[318]. Structural indicators signal whether the State accepts the corresponding international obligations and standards; process indicators refer to the measures and efforts taken; and the outcome indicators display the results attained, all of these within a specific period of time[319]. The SR on the Right to Health has summarized how health indicators should be developed in order to help monitoring the realization of this right[320]. The indicators are crucial to achieve each aspect of the wide content of the right to health as well as other related human rights.

On the other hand, the diverse target-groups for the prohibition of discrimination should be disaggregated in order to allow also the possibility of setting benchmarks or targets

316 GC14. Paragraph 9.

317 Ibid., Paragraphs 30 and 31.

318 Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health, Paul Hunt (E/CN.4/2006/48, March 3, 2006).

319 Ibid.

320 Ibid. Paragraph 66.

for each group in particular and avoid meaningless generalizations[321].

3. The distinctive tripartite typology

In its specific GCNo.14, the Committee develops the tripartite typology of the State´s obligations regarding the right to health; while GCNo.12 develops those specific to the right to food. It is worth emphasizing that both rights are always connected, as stated in Art.2.1 (already explained), which also details their application and possible interferences.

Even though the Committee refers to the trilogy respect-protect-fulfill[322] as "levels" of obligations[323], they might more accurately be called "categories" of duties[324], all of which are at the same level of significance. The African Commission has already gone even beyond and has added a fourth category to this well-known tripartite typology: the obligation to promote the enjoyment of all HRs[325] as well as the hierarchies of obligations[326].

a. The obligation to respect

The obligation to respect [327], particularly in this case study,

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321 Ibid. Paragraph 34.

322 GC12.Paragraph 15.

323 Ibid. Paragraph 16.

324 Wenche, B.E. and Kracht, U, Food and Human Rights in Development, Evolving Issues and Emerging Applications. Page 148.

325 The Social and Economic Rights Action Center and the Center for Economic and Social Rights vs Nigeria, Communication 155/96, paragraphs 44-47 and Zimbabwe Human Rights NGO Forum vs Zimbabwe, Communication 245/2002, Annex III, (2006), 21st Activity Report at 54, para. 152.

326 Zimbabwe Human Rights NGO Forum vs Zimbabwe, Communication 245/2002, Annex III, (2006), 21st Activity Report at 54, para. 152.

327 GC14.Paragraph 33.

consists in the State refraining from its own unlawful activity of polluting air, water, and soil, as well as not interfering with popular participation in health-related matters[328]. Furthermore, the State should refrain from impeding and blocking the development of legislation or the realization of measures like nutrition programs which affect the access to food and ensure that public institutions are apt to provide for the realization of the right to food[329].

In general, it can be said that from the moment that Argentina incentives the realization of specific public policies without counteracting the possible negative effects with respect to the realization of HRs, it may be failing in its obligation to respect. The analysis of the National Strategic Plan 2010-2020 in the section on Public Policies [330]shows cases with the relevant guidelines.

b. The obligation to protect

The obligation to protect means that States must procure the measures to guarantee that third parties –in this matter, especially transnational companies– will not interfere with the full enjoyment of the rights of the population[331]. It denotes an act-obligation aimed at avoiding the violation of HR because of the action of third parties (e.g. avoid the use of harmful substances, the contamination of soils and waters, etc.). In the words of the Committee:

> "[s]tates should adopt legislation or other measures to ensure that private actors conform with human rights standards when

328 Ibid. Paragraph 33.

329 Food. "Page 18.

330 See: Part III, Chapter 6.

331 GC14.Paragraph 33.

> providing health care or other services (such as regulating the composition of food products)[...], protect individuals from acts by third parties that may be harmful to their right to health, ensure that third parties do not limit people's access to health related information and services, including environmental health", "[...]ensuring that food put on the market is safe and nutritious[...]", "[...]establishing and enforcing food quality and safety standards[...], avoid the destruction of natural resources by third parties (through pollution, or agricultural hazardous products) available for food production, protect people from unhealthy food, adopt measures and legislation compatible with international legal obligations regarding the right to food, as well as create institutions or other governmental organisms with the purpose of guaranteeing the full realization of the right"[332].

As it was stated in Part I, one innovation that the GR left in Argentina was the mode to cultivate: monoculture and direct sowings. Conversely, the FAO and other experts strongly recommend crops rotation. The State should ensure this through both regulation and its subsequent control. However, as per the reasons laid out above,no action in this direction has been found in Argentina. This affects biodiversity due to the degradation of soils, as well as the right to health, especially through the lack to adequate food.

Moreover, it is important to note that the same companies which sell the transgenic seeds to the agricultural producers, also sell the so-called "technological package" required to cultivate them, thus resulting in an oligopoly over food production[333]. In

332 Fact Sheet No.34, pages 18 and 26.

333 See Annex 1 and the Excursus.

relation to this, a law project was presented to reform the current "Seeds Law"[334]. The current law is under UPOV 78[335], which states that the seeds obtained from the harvest itself can be freely used by farmers for reseeding and/or commercializing. Transnational agribusiness companies require a modification under the intellectual property regime which would entitle guarantee the abovementioned monopoly *de jure*. Meanwhile, they charge "extended royalties"[336] in addition to "breeders right", paid by the farmers when seeds are bought. This amendment would affect food security in depth, biodiversity as well as food sovereignty[337].

c. The obligation to fulfil

The obligation to fulfil has direct relation with the duty of the State to take concrete action: legislative, administrative, financial, and judicial measures, among others, in order to ensure the full realization of the rights, as well as a duty of developing appropriate public policies[338]. The measures should be taken in

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334 Law No.20.247, the regulatory decree *(2183/91)* and resolutions *(35/96)* and *(338/2006)*.

335 International Convention for the Protection of New Varieties of Plants 23 October 1978 In force from 08 November 1981(B7 p. 961:89/A 815 UNTS 89*)*.

336 This modality is not in the current legislation. However, the companies *(*the Argentina Association of Plant Breeders Protection, which gathers among other companies Nidera, Syngenta, Cargill, Monsanto, Aceitera General Deheza, Molinos*)* support its use in the International Union Convention for the Protection of New Varieties of Plants *(1991)*. For more information see: Ferreyra, S., La Reforma de La Ley de Semillas En Argentina Análisis de La Propuesta Del Gobierno Y Sus Principales Impulsores *(*Buenos Aires-Argentina: Instituto de Investigación Social, Económica y Política Ciudadana, 2014*)*.

337 See also: FAO Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security-Guideline 8.1.

338 This point was developed in Part Chapter VI in accordance with the obligations established

relation to the content of its pre-determined rights, as well as in relation to environmental threats that may arise from epidemiological data[339]. The obligation to fulfil may consist in facilitating, providing, or promoting[340]. To accomplish this, the State should take measures to facilitate the enjoyment of the right by people in a given community; provide actions to achieve the enjoyment of the right when reasons beyond the control of individuals may interfere with their full realization, and directly promote conditions for the enjoyment of the right with measures like furthering research and providing information[341].The facilitation aspect of the obligation to fulfill includes all necessary pro-active measures by the State in order to ensure food security (e.g. agrarian reforms, control of crop exports) and health[342]. Educational measures would be one way to facilitating the enjoyment of the right, as well as informing and educating the population and encouraging strong participation of the population in deliberation and decision-making. The obligation to provide implies a more direct intervention of the State in given circumstances, for example giving food when people are unable to access it for themselves for causes out of their control, like in the case of natural disasters[343],

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in Art.2.1 above.

339 GC14.Paragraph 37.

340 Ibid., paragraph 33.

341 Ibid., paragraph 37.

342 GC12.Paragraph 15; UN Office of the High Commissioner for Human Rights (OHCHR), "Fact Sheet No. 34, The Right to Adequate Food.", page 18.

343 Other measures like educational measures would be one way to deep the enjoyment of the right as well as informing and educating the population about their rights. A strong participation

7) PARTICULAR OBLIGATIONS

1. The right-holders

a. Special reference to affected groups

The *problematique* referred to above affects all of society. On the one hand, through the direct exposure of the population to fumigations with agrochemicals in the adjacencies of rural homes and schools, and on the other hand, through the indirect exposure of the entire population via the consumption of food which contain residues of agrochemicals and derivatives of GMOs, resulting in a cumulative "cocktail". Some groups specially at risk are listed bellow[344].

The first group are the agricultural workers and farmers, which are permanently in touch with and exposed to pesticides, even when following safety precautions. The latter is not the most common scenario in developing countries due to the informalities, lack of control and resources to follow minimal parameters of protection. Moreover, the families of agricultural workers and farmers are also exposed not only because often family members work together in the same field, but also because they carry home their infected clothes and shoes. The situation becomes even more dire when children also work in agriculture. The International Labor Organization has estimated that close to the 60% of agricultural workers are children, who face more health

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of population in the processes as well as in the decision-making import the facilitation of the right. The obligation to provide implies the most direct intervention of the State giving food and exist when the people is unable for causes without of their control, like natural disasters. (GC12, paragraph 15; Fact Sheet No.34, page 19).

344 Report of the Special Rapporteur on the Right to Food (24 January 2017) A/HRC/34/48.

vulnerabilities because of their youth. In the case of migrant and seasonal workers all previously mentioned vulnerabilities are enhanced due to language barriers and extreme living conditions.

Another highly exposed group are indigenous communities, most of which live in the surrounding areas of agroindustrial plantations (sometimes after having been displacedfrom their lands), and whose own crops are polluted with the pesticides used in the surrounding plantations.

The surrounding communities and schools are those more directly affected by aerial spraying as well as by the use of backpack-type sprayers. The case of Madres de Ituziangó is a clear example of this. Ituzaingó Anexo is a neighborhood in the province of Córdoba, Argentina, surrounded by soya fields. In 1999, Sofia Gatica gave birth to a baby who died 3 days lateras a result of of her kidney-malformation. Because of this, Gatica and some of her neighbors organized and began to conduct house-to-house surveys to investigate other similar cases (birth defects, cancer, anemia, lupus, respiratory and neurological diseases) and collected data about the general health situation of the neighborhood by making a health map. The first official study carried out by the local municipality gave as result that from a total of 30 children examined, 23 had persistent toxic agrochemicals in their blood. A second larger study found that 114 out of 142 children living in the neighborhood had toxic agrochemicals in blood. It was also discovered that the cancer rate was 41 times higher than the national average. This confirmed a strong correlation with the cropping-spraying of glyphosate and endosulfan close to the housing areas[345]. This case became the first to reach

345 Valente,Marcela(2013)Landmark Ruling against Agrochemicals in Good News! How women

a criminal court, and in which an agricultural producer and an aero-fumigator were found guilty of the crime of environmental contamination[346].

b. The principle of non-discrimination: alleged interferences

Non-discrimination and equality are transversal concepts in the realization of HRs[347]. Equality means not identical treatment to all people, but instead, considering the necessities and particularities of diverse social groups[348]. The principle of non-discrimination would be violated whenever any constraint, segregation, or difference is made affecting the most fundamental freedoms and entitlements as well as equality[349]. In this regard the principle is at the core of the ICESCRs, which determines, under Art.2.2 that "States parties must undertake [...] to guarantee that the rights enunciated in the present Covenant will be exercised without discrimination..."[350]. Because the non-discrimination principle is also in the UDHR, and some of its rules are Customary International law, the principle is applied to all situations, beyond the scope of the international and regional HRs treaties.

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and men stop violence and save the planet (Heinrich-Böll-Stiftung, Berlin) Page 111.

346 Gabrielli, Jorge Alberto y otros p.ss.aa.infracción Ley 24.051 - Recurso de Casación (SAC 2403217).See also: www.reduas.com.ar

347 Constitution of the World Health Organization, adopted by the International Health Conference, 22 July 1946.

348 UN Office of the High Commissioner for Human Rights (OHCHR), "Fact Sheet No. 34, The Right to Adequate Food.", page 20.

349 UN Office of the High Commissioner for Human Rights (OHCHR), "Fact Sheet No. 31, The Right to Health", page 7.

350 ICESCRs Art. 2.2.

The legal dimension confirmed by the Committee and Art. 11 ICESCs as well as Art.12.1, explicitly refers to "everyone" as right-holders.An action (or omission) by the State may involve some grade of indirect discrimination[351] on the ground of property[352] and/or the economic and social situation privileging a social group -companies, producers, investors, etc.-in detriment of the health of the vast population[353]. This could involve also a systemic discrimination on such affected groups[354].

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351 The Committee in paragraphs 10.a.b states that a) "direct discrimination occurs when an individual is treated less favorably than another person in a similar situation for a reason related to a prohibited ground *[...]* Direct discrimination also includes detrimental acts or omissions on the basis of prohibited grounds where there is no comparable similar situation". If direct discrimination arises from a law it is called also "formal discrimination". "(b) Indirect discrimination refers to laws, policies or practices which appear neutral at face value, but have a disproportionate impact on the exercise of Covenant rights as distinguished by prohibited grounds of discrimination". In this case the different treatment is manifested in the outcome or in the effect" UN Committee on Economic, Social and Cultural Rights (CESCR), "General Comment No. 20: Non-Discrimination in Economic, Social and Cultural Rights (Art. 2, Para. 2, of the International Covenant on Economic, Social and Cultural Rights)" (E/C.12/GC/20, July 2, 2009).

352 The Committee explains in GC20, paragraph 25 that "Property status, as a prohibited ground of discrimination, is a broad concept and includes real property (e.g., land ownership or tenure) and personal property (e.g., intellectual property, goods and chattels, and income), or the lack of it".

353 Art.2.2 ICESCs states the grounds, but the list is not exhaustive: "The States Parties to the present Covenant undertake to guarantee that the rights enunciated in the present Covenant will be exercised without discrimination of any kind as to race, color, sex, language, religion, political or other opinion, national or social origin, property, birth or other status".

354 GC20, Paragraph 12: "...[S]ystemic discrimination can be understood as legal rules, policies, practices or predominant cultural attitudes in either the public or private sector which create

When endosulfan was banned[355], it was ruled that it would be gradually phased-out, allowing for a period of time till exhausting the stocks. This decision, with the purpose of harmonizing various interests involved –the health of the population and the economics interests of part of the population– affected, definitely the population`s health because during the phase-out period, people were further exposed to the insecticide, even after its hazardousness had been confirmed. A similar situation of conflict arises when the State does not take any measure for limiting extensive cultivation and enforcing crops rotation as well as when it omits or refuse the treatment of specific laws which affect directly the commercialization of some products of one industrial sector at the expense of the population e.g. the establishment of the traceability law of agrochemicals.

In all these circumstances, privileging the economic interests of a group clearly affects the rights of the rest of the present and future population[356].

2. The right to health[357]

a. Possible interferences in its content

The Committee establishes the necessity of guarantee the pre-conditions of health as a core State obligation. In this regard, the access to minimum adequate and safe food, safe and drinking water, the adoption and implementation of a national

relative disadvantages for some groups, and privileges for other groups".

355 See Chapter 2.

356 Also, minorities like indigenous people have been displaced from their lands on the interests of big producers.

357 For a comprehensive understanding please refer to Chapter 4.A.

public health strategy and a plan of actions on the basis of epidemiological data may be some examples.[358]

States have also other obligations of great importance, such as reproductive, maternal and child health; or provide education and access to information related with health[359].In the following paragraphs they shall be considered individually.

i. Preconditions for the realization of the right to health

The highest attainable standard of health implies not only the State using the maximum of its resources, but also the realization of the preconditions necessary to achieve the realization of this right. In this regard, other rights which work as underlying determinants should present full development to fulfill the first one. Accordingly, the quality of water and environmental working conditions must have full realization. A case inside Brazil jurisdiction has implied responsibilities of companies - Shell and BASF- because of land and groundwater contamination and the subsequent health problems-among other cancer- of people who worked and lived around their pesticide plant. The Court decided the accountability of those companies and the obligation to compensate the victims[360]. Despite the fact that claimants focused on the responsibility of the companies, the obligation of the State to protect is also clear, since the pesticide plant was not being properly controlled by the State.

Furthermore, the alleged breach of the right to information

358 GC14.Paragraph 43.

359 Ibid, paragraph 37.

360 Brazilian Ministry of Labour and workers' associations against Shell Brazil and BASF- Paulínia Labour Court, São Paulo-Brazil ATO.SEJUD.GP. No. 519/2010 Available at: http://business-humanrights.org/en/shellbasf-lawsuit-re-brazil#c18656

may affect the freedom of control one's own health and body. Following Souza Casadinho[361] –who wrote a study based on the testimonies of farmers and workers– the use of pesticides presents risks at different stages. During the acquisition of products, the first risks appear, for example, due to the omission of labeling as a consequence of the lack of State control, to the sale of fractioned products and the lack of recipe made by a professional. The next stage is storage, where dangers come from the lack of information due to no label or even the ignorance about the possible consequences of a bad handling, apart from the absence of control of proper storerooms. In Nepal, a petition was made to issue an interim order to relocate the stored pesticides from the schools neighborhood to a securer place, invoking the preservation of "public health and environment from the risks posed by the pesticides stored in Amalekhgunj and other different parts of the country"[362]. The Court based its analysis in the question of the nature of adverse impact on the environment and public health through the emission, transportation and disposal of pesticides, as well as the efforts that are underway to minimize such ill-effects by the Government. During the worth-analysis, the Court affirmed that the concept of environmental justice –a key conception in this regard– tries to balance the diverse issues presented with the use of pesticides: HRs, public health, development

361 Souza Casadinho, J., "Las Practicas de Manejo e Incumplimiento de Las Normas de Trabajo Con Plaguicidas Y Su Vinculación Con El Deterioro Ambiental Y La Salud Humana. Un Estudio En Las Producciones En Argentina," Revista Virtual Redesma 4, no. 1 (abril 2010).

362 Raju Prasad Chapagain and others v. Government of Nepal, Ministry of Agriculture and Cooperatives, writ 2959/2062 -21 Oct 2009- Supreme Court of Nepal Page 4.

and ecology[363]. The harmful chemicals damage ground water, superficial waters, and the subsequent degradation of the soils affecting agriculture and ultimately the right to adequate food. After a detailed examination of international instruments, as well as the relation with its national juridical order, the Court conclude that, in this case, the liability is exclusive of the State, because of its obligation to protect the enjoyment of the right from interferences by third parties.

The hazards on the dosage of products and their application are consequence of the prior, worsened through the lack of advice by specialized and professional personal. The non-compliance with these rules are directly related to the lack of controls by State[364]. The International Code of Conduct on Pesticide Management -which provide guidelines to companies and governments alike regarding the adequate use of pesticides- currently is been used to shuffle off two pesticide manufacturers -Bayer and Syngenta- for alleged violation of the Code in Punjab (India). The report has been presented before the FAO/WHO Panel of Experts on Pesticide Management, and claims that the lack of adequate labeling and the absence of protective equipment for operators as well as the lack of adequate training and monitoring violate the right to information with regard to health [365]. Even though

363 Ibíd., Page 11.

364 Souza Casadinho, J., "Las Practicas de Manejo E Incumplimiento de Las Normas de Trabajo Con Plaguicidas Y Su Vinculación Con El Deterioro Ambiental Y La Salud Humana. Un Estudio En Las Producciones En Argentina".

365 Ad Hoc Monitoring Report Claims of (non-)adherence by Bayer CropScience and Syngenta to the Code of Conduct Provisions on Labeling, Personal Protective Equipment, Training, and Monitoring presented before the FAO/WHO Panel of Experts on Pesticide Management by the

the claim seeks to hold the companies accountable, the obligation to protect of the State is clear in the lack of monitoring the compliance with ICCPM by companies.

In Argentina, the AGN denounces the absence of control from the acquisition of the product till the waste containers, and also an absence of coordination between nation, provinces and municipalities, as well as the subsequent lack of sanctions in case of breaches to the legislation[366].

It could seem as first glance that the law of agrochemicals containers 27.279 called "Minimum budgets of environmental protection for the management of empty containers of phytosanitaries" –to the present date without its national regulation– is an improvement in the treatment of waste originated by agrochemicals. However, it implies a step backwards in terms of legislation and a subsequent lack of protection of human rights. The law 27.279 presents several and serious disagreements with the precepts of the law 24.051 of Hazardous Waste. This law in Annex I catalogs waste resulting from the production, preparation and use of biocides and phytosanitary products as "hazardous waste"; while the new regulatory framework defines them as a remaining phytosanitary, considering them "simply waste". The treatment of empty agrochemical containers under the legal framework

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European Center of Constitutional Law and others on 01 October 2015. Available at: http://www.ecchr.eu/en/our_work/business-and-human-rights/pesticides/q-a-pesticides-monitoring-report-to-fao.html

366 See: AGN (National General Auditor's Office) report approved by Resolution 247/12. (2012) Auditable management of the National Agricultural Chemicals, Veterinarian Products and Food (DNAPVyA)- National Service of Health and Agri-Food Quality (SENASA) in the registration, authorization and / or restriction of agrochemicals -Pages 29,30 and 31.

of law 24,051 is much more demanding, strict and protective than that of law 27,279 in which the "user and applicator will be objectively responsible for guaranteeing the waste reduction procedure" through the triple washing and delivering the containers in a "transitory storage center", for which "they may use a transport that does not require a specific rating". While law 24.051 requires the carrier registration in the National Registry of Hazardous Waste Generators and Operators, the new law 27.279 says nothing. Regarding the breach of what is determined by law, law 27.279 establishes fines, warning, suspension of activity, closure penalties, unlike Law 24.051, which provides for a penal regime and the obligation to adopt measures tending to reduce the amount of hazardous waste generated.

In addition, recent studies –from 2016 and 2017–have shown the presence of pesticides at a dangerous level for aquatic life along the entire course of the Paraguay and Paraná rivers, mainly accumulated in the sediments, but also present in the water (See Part II, Chapter 5.1.b).

A serious problem affecting the right to information is the lack of identification of GMOs in food-labelling. This issue shall be discussed in Chapter 7.3.a.

ii. Component elements of the right to health

The elements included in the right to health, from the side of the preventive function, are *the availability* and *acceptability* of facilities, goods and services disposed to the full realization of the right. *Accessibility* can be approached from an economic, physical, and informative perspective, and is closely related with the freedom to exercise self-control over one's own health. The case of organics products in Argentina serves as illustration for this analysis. Since the majority of arable land is cultivated

with GMOs, where crops are treated with agrochemicals, which makes possible the development of this type of agriculture, the possibility of choosing to consume organic products is reduced not only because of the lack of availability and their high price (which again raises the issue of discrimination), but also due to the lack of information and education in the matter[367] (see also Part III, Chapter 5.1).

The most transcendent element related with pesticides and GMOs is their (scientifically approved) *quality***,** and the safety of the facilities, goods and services needed to its complete realization.

In this sense, the interference would appear when scientific studies show that authorized substances –like the case of glyphosate and 2,4-D– are unsafe to health; international organisms affirm their dangerousness to human health and/or the environment, and State action chooses a course of action that ignores these warnings.

Another example is when available tools to re-evaluate pesticides permissions are ignored[368]. In the case of Glyphosate[369] the discussions around its negative effects in human health intensified after the IARC re-categorization on March 2015[370], building on a vast accumulating body of studies showing the seriousness of the threat posed by Glyphosate. Here the measure of re-evaluation could be clearly used by the authority of control,

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367 Related with this is also the right to information and the importance of labeling developed in Chapter 7.3.a.

368 The particular attribution establishes under SENASA Resolution 312/99 to analyze the risk of registered agrochemicals products has not used in many occasions (See Annex 3).

369 Glyphosate is widely used in Argentinean crops. See Chapter II.3 (4.2.4.b) and Annex 2.

370 See Chapter 2.3.

but it is not. On the grounds of this deficiency, some claims were presented by civil society organizations in the provinces of Córdoba and Chaco. Both demand a re-evaluation of Glyphosate; the prohibition of the application without respecting pre-established grace-periods; the realization of the right to information, requiring the exhibition of relevant reports; and the full realization of the right to participation, concretely when and if the consultative process is opened[371].

Another controversial point refers to the time to register a given agrochemical. The controversy lies in the fact that it is the interested third party who presents an affidavit together with the lab tests. The competent State authority uses these as bases for its technical evaluation regarding the harmlessness, toxicity and other criteria relevant to the approval of agrochemicals [372]. The AGN indicates that "it is important that the State has its own scientific production on the subject and does not depend on the information submitted by interested parties"[373]. Also controversial is the issue of to what extent the interested parties

371 Presenta reclamo administrativo/ solicita realice gestiones ante SENASA/ plantea medida cautelar administrativa.glifosato (Cordoba, 20 May 2015)
Available at: http://www.contraosagrotoxicos.org/index.php/noticias/40-campanha/531-argentina-presentacion-administrativa-solicitando-al-senasa-la-prohibicion-del-glifosato

372 When the registration is required, the authority make a technical evaluation of the labs tests presented by the applicant. Over all the information presented by the applicant the authority approves or rejects the submission (See Annex 3).

373 See: AGN (National General Auditor's Office) report approved by Resolution 247/12. (2012) Auditable management of the National Agricultural Chemicals, Veterinarian Products and Food (DNAPVyA)- National Service of Agrifood Health and Quality (SENASA) in the registration, authorization and / or restriction of agrochemicals - Pages 29, 30 and 31.

should be entitled to invoke the right to confidentiality to avoid disclosing information about substances suspected of affecting human health[374].

A very transcendent point also is the determination of MRLs for pesticides. The MRLs on agricultural products and by-products are established by SENASA, without the intervention of any Ministry of Health dependency. The Decree 815/99 establishes that the regulations of the Argentine Food Code must be kept updated taking as references the international norms and the agreements celebrated in the Common Market of the South. In addition, Act 27,233 declares –among other things–, the national health interest of the plants, the quality of the raw materials product of the agricultural activities, as well as the production, innocuousness and quality of the agro-alimentary sector, the specific agricultural inputs, the control of chemical residues, chemicals and microbiological contaminants in food, and the national and international trade of said products and their by-products. Likewise, all the national norms by which the sanitary-hygienic condition of the food of agricultural origin is instrumented or regulated are declared of public order. In this sense there are serious omissions of the competent bodies of the National State and the agencies in charge. They are not fulfilling their obligations in relation to the determination and updating of the MRLs. For illustrating: while the FAO sets as MRL 0,05mg of Glyphosate in milk, in Argentina is 0,1mg; while the FAO sets as MRL 1 mg of 2,4-d in citrus fruits, in Argentina is 2 mg; while the FAO sets as MRL 0,05mg of 2,4-d in sugar cane, in Argentina is 2 mg.

374 See Chapter 5.3.c.

In the case of GMOs, the process followed to authorize or reject GM-vegetables have the characteristic of being preventive de-facto[375]due to the intervention of 3 institutions with the corresponding interest, and the evaluation of a GMs for cropping is made case-by-case using also scientific and technical criteria (See Annex 4). However, the norms used as a guideline do not have the precautionary principle at their core, neither are they aimed at the full realization of the right to health. The process is also based on the principle of substantial equivalence, which considers that if a transgenic product is substantially equivalent to its traditional, non-GM variant, there would be no need to demonstrate the human and environmental safety of the GM in question[376]. The subsequent non-labeling clearly interferes with the enjoyment of the full realization of the right to information and to health, at least.

b. The Particular State obligations regarding human health

The right to the highest attainable standard of health, as part of the ICESCs, must be complied by States not only under general obligations of Art.2.1, but also with specific duties. In this regard Art.12 paragraph 2 illustrates a non-exhaustive list of these, as steps that States must take:

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375 Consejo para la información sobre Seguridad de Alimentos y Nutrición. Bioseguridad de los cultivos transgénicos y sus derivados. Criterios para la evaluación de riesgo.

Available at: http://www.cisan.org.ar/articulo_ampliado.php?id=26&hash=7f147789491211232f-b84e03b357b6e1 *[*last entered 25/11/2015-16:48*]*.

376 Larrión Cartujo, Jósean, "Las Relaciones Entre La Ciencia, La Tecnología Y La Sociedad-Un Estudio de La Controversia Sobre Los Organismos Modificados Genéticamente" *(*Tesis Doctoral, Universidad complutense de Madrid-Facultad de ciencias políticas y sociología-Departamento de sociología V *(*Teoría sociológica*)*, 2005*)*. Page 274.

a) "The provision for the reduction of the stillbirth rate and of infant mortality and for the healthy development of the child"[377].

Herbicides like Glyphosate, where scientific studies demonstrate that in prenatally induce malformation on embryonic and placental cells[378][379][380], or that 2,4-D is neurotoxic, causes genetic mutation in animal testing and human studies[381], disrupts endocrine that also produce reproductive disruption and toxicity[382], among other problems, are both widely used in agriculture – without mention others with similar features–. Also, GM-crops are widely used in industrial agriculture, despite the prevailing uncertainty of their consequences in human health.

Several cases have shown problems in this sense. The most renowned is the Madres de Ituzaingó Anexo case.

b) "The improvement of all aspects of environmental and

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377 It implies the right to maternal, child, sexual and reproductive health. See GC 14, paragraph 14.

378 Benachour and Séralini, "Glyphosate Formulations Induce Apoptosis and Necrosis in Human Umbilical, Embryonic, and Placental Cells".

379 Dallegrave E, "Pre- and Postnatal Toxicity of the Commercial Glyphosate Formulation".

380 UN Committee on Economic, Social and Cultural Rights (CESCR), "General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12 of the Covenant)." Poulsen MS, Rytting E, Mose T, Knudsen LE (2009) Modeling placental transport: correlation of in vitro BeWo cell permeability and ex vivo human placental perfusion Toxicology in Vitro 23:1380–1386.

381 Berajano Gonzales, citing Anon (1999). Occupational Safety and Health Guideline for 2,4-D (Dichlorophenoxyacetic Acid) Health Guidelines – 2, 4-D; Occupational Safety and Health Administration (OSHA), US Department of Labor. http://www.osha.gov/SLTC/healthguidelines/2_4d-dichlorophenoxyaceticacid/recognition.html

382 Anon.Chemical Wath Fact sheet 2, 4 D Beyond pesticides, (701 E street SE suite 200. Washington DC 20003. 2004) www.beyond pesticides.org

industrial hygiene", involves also the provision of safe working conditions, adequate housing and adequate food[383].

Taking the example Glyphosate and 2,4-D, when those are applied via spraying (aerial application) may affect also the environment, working conditions as well as the adequate housing. In cases such as *Cavigliano Peralta, Viviana y otros c/ Municipalidad de San Jorge y otros s/ Amparo*[384], fumigations over soya crops have been suspended based on the precautionary principle. Instead, in *Monsalvo, Cristina y otros c/ Delaunay, Jorge s/ amparo*[385], ruling only limited fumigations to a certain distance, also based on this principle, contained in environmental law 25.675. In the case *Picorelli, Jorge Omar y otros c/ Municipalidad de General Pueyrredon*[386], the Supreme Court of Justice (Buenos Aires) declared the unconstitutionality of a norm which authorized fumigation around urban zones affecting health population based on the principles of prevention, precautionary, and progressivity under law No.25675. The case of the Barrio Ituzaingó Anexo resulted not only in limiting the distances of fumigation, but also derives in other responsibility attributions: the criminal responsibility of the people in charge of applying pesticides. The 1st Criminal Court of Cordoba declared both the landowner and the airplane pilot responsible

383 GC14. Paragraph 15.

384 Cavigliano Peralta, Viviana y otros c/ Municipalidad de San Jorge y otros s/ Amparo Exp. No.208/09-10 Jun 2009.

385 Monsalvo, Cristina y otros c/ Delaunay, Jorge s/ amparo, Corte Suprema de Justicia de la. Provincia de Buenos Aires, 08.08.2012.

386 "Picorelli, Jorge Omar y otros c/ Municipalidad de General Pueyrredón S/ INCONST. ORD. Nº 21.296" I-72669 (La Plata 24 Sept 2014).

for spraying pesticides in violation of the allowed distances[387].

The International Court of Justice received a claim by Ecuador, which denounced the Colombian state for serious damages to the Ecuadorian people, the environment, and the animals as a result of aerial fumigations (glyphosate) on coca and marihuana crops in Colombian territory at the border with Ecuador. After 5 years both countries arrived to an agreement, thus Ecuador dismissed the claim[388].

The cases of Nepal and Brazil also show the failure of States to comply with this obligation, but in Brazil case the claim was only addressed to the companies[389].

c) "The prevention, treatment and control of epidemic, endemic, occupational and other diseases", include also, "the promotion of social determinants of good health…"[390].

In this regard, if the use of herbicides would produce severe acute and chronic diseases -including infertility and cancer-, then proactive measures by the State would be needed to protect health. This would imply either banning or adopting all the necessary measures to protect the health of people, including an effective and appropriate control by State organisms throughout all the process. Crucial to this purpose is the use of databases with widely disseminated epistemological studies. The Special Rapporteur Paul Hunt establishes, among others, the necessity of States to disaggregate the information collected as well as in

387 "Gabrielli Jorge Alberto y otros p.s.a. Infracción Ley 24.051" Exp G-26-08 Cámara en lo Criminal de primera nominación Secretaría Nº 2-Córdoba-21 Ag 2012.

388 International Court of Justice. Ecuador vs. Colombia – (31 March 2008- 13 Sept 2013).

389 These cases are detailed in Chapter 7.2.a. ii.

390 GC14. Paragraph 16.

the process of collect it. "(b) They [should be] disaggregated by at least sex, race, ethnicity, rural/urban and socio-economic status; the grounds of disaggregation should be reviewed in the light of capacity, context and the relevant health issue in question"[391].

The participation of the population in the decision-making process is also fundamental. The importance of Public Audiences has often not been taken into consideration, in particular in the early phases of the process (i.e. debates about substantive risks). This is one of the points which has been denounced recently during the discussion of a project law on agrochemicals[392], where some NGOs pointed out the lack of consultation and participation of medical doctors, scientists, professionals and organizations committed to the problem of pesticides was omitted [393].

d) "The creation of conditions which would assure to all medical service and medical attention ***in the event of sickness****"*, which involves the right to health facilities and services and participation of population in political decisions in health issues[394].

This is immediately related with the need of a permanent knowledge refresh by the professionals in the matter –specially health professionals– who deal with these issues as well as the casual relation between the agrochemical's effects and possible diseases.

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391 Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health, Paul Hunt. Paragraph 66*J*.

392 Registered under number 7180-D-2014.

393 See: http://renace.net/?p=5252.

394 GC14. Paragraph 17.

3. The right to adequate food[395]

a. Possible interferences in the content: Elements.

The lack of availability and accessibility could amount to a violation of the right to food if the State takes measures that hinder farmers from accessing the informal seed market, failing in its obligation to respect [396].The element of adequacy comprises a range of aspects, including dietary needs[397] and safety. The Committee formulates the latter as follows:

> "free from adverse substances' sets requirements for food safety and for a range of protective measures by both public and private means to prevent contamination of foodstuffs through adulteration and/or through bad environmental hygiene or inappropriate handling at different stages throughout the food chain; care must also be taken to identify and avoid or destroy naturally occurring toxins"[398].

The Committee establishes that all the ways to achieve the realization of it must be also sustainable and must not interfere with the realization of other HRs[399].These elements are considered the essential components and imply the core content of the right to food.

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395 For a comprehensive understanding please refer to Chapter IV. B.

396 Special Rapporteur on the Right to Food, Olivier De Schutter, "Seed Policies and the Right to Food: Enhancing Agrobiodiversity and Encouraging Innovation" (A/64/170, July 23, 2009). Paragraph 4. See also Chapter 6.3.2. From this perspective, there would be a failure in the duty to protect.

397 GC12.Paragraph 9.

398 Ibid., Paragraph 10.

399 Ibid., Paragraph 8.

As it was noted in Chapter 2 pesticides may be classified into (a) systemic, or (b) by contact. Both may be ingested after being used to fumigate the crop in question. In some legislation a grace period between pesticide use and crop consumption is established. Hygienic and safety measures may be recommended to the consumer in regard to contact pesticides, such as washing food properly before its consumption. However, in the case of systemic pesticides, such measures are ineffective insofar the plant absorbs the substance into its sage, and thus cannot be removed after it has been applied. This is the case of the herbicides glyphosate and 2,4-D. For the former it has been shown that, when consumed, it has a persistent effect of 15 to 20% in the body. If apart from this, it is added that the diversity of food consumption brings also other pesticides along with, the accumulation of them in the human body reaches frightening values.

There are studies which have established the ingestion of pesticides may occur also indirectly through water[400] or through other consumer goods, such as beer[401]. A study carried out by the INTA warned that doses of pesticides in breast milk currently exceed the level considered acceptable in food and water as per the Argentinean Food Code by 15 percent. The research was conducted in maternity hospitals of Buenos Aires, where it was found that pesticide residues alter the nutritional quality of food and could cause health disorders in infants due to their high persistence in breast milk[402].

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400 See for example the India case in the next paragraphs.

401 See the study recently published in Germany on high Glyphosate-residues in beer, page 26.

402 "Audiencia sobre Soberanía Alimentaria, Derecho a la Alimentación y Semillas en América Latina y el Caribe" Report made by: Coordinadora Latinoamericana de Organizaciones del

Furthermore, the consumption of GMOs has worried scientists for decades. Some scientists have shown the negative long-term impact of GMOs on health; while others indicate that nowadays there is no scientific certainty regarding such effects, and yet others affirm their safety.

The right to adequate food is also closely linked with the right to information and consumer´s rights[403]. Adequately labelling of food merchandise would be considered a necessary action for consumers to be informed about the ingredients and substances they ingest. There is no national law establishing this obligation, but some provinces and their localities have dealt with this situation. Some localities, like Bariloche –in the Argentine province of Rio Negro– have enforced regulations demanding that any food resulting from the use of genetic engineering techniques in the production and /or processing thereof, must be identifiable through a list exhibited in storehouses[404]. Another provincial legislation requires labelling of GMs products[405].

Besides this, worth mentioning are some petitions made in this regard. In India, a claim was presented demanding that drinks manufactured by PepsiCo and Coca-Cola which had been contaminated with pesticides because of the water used,

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Campo (CLOC- Vía Campesina); FIAN Internacional; el Colectivo Social por el Derecho Humano a la Alimentación (Guatemala); el Observatorio Permanente de Derechos Humanos en el Aguán – OPDHA (Honduras); y del Centro de Estudios Legales y Sociales (CELS, Argentina) to be presented before the Inter-American Commission on Human Rights 31 Oct 2014((page 24)

See also:http://www.herbogeminis.com/IMG/pdf/plaguicidas_leche_materna_bonaerense.pdf

403 See Chapter 5.3.a.

404 San Carlos de Bariloche Resolution No. 1121/01.

405 Tierra del Fuego Act No.579 (2 Aug 2003), Chaco Act No. 5200 (26 Nov 2003).

which are dangerous to human life and requested them to be banned. Its analysis was centered on the right to information and the right to know allegedly violated because of the absence of specific information on the components –including the amount of pesticides–in the label. The Court declared the companies responsible[406]. The conclusion of the Court set aside the State responsibility in the realization of the right to health, food and life, since its analysis purely referred to the need of guaranteeing personal liberty to choose what to buy or consume in accordance the information that companies should give.

In another case at the Inter-American Commission on HRs, the petitioners accused the Chilean State of violating the right to seek and receive information, and the right to participation in public affairs, since Chile had failed in its obligation to respect and fulfill under the American Convention. In his justification, the applicant states that "the release of transgenic crops to the environment and their use as human and animal food involved certain risks for human health and the environment that were not totally studied or quantified." They declared also that "the information related to transgenic crops and their location should be accessible to all citizens [...] Furthermore, the lack of knowledge about what was being produced and of its direct effect on the environment could diminish the market value of the soil (right to property), affect the quality of soil and water (right to live in an environment free of contamination), and disrupt nearby organic production (right to develop an economic activity)"[407].

406 Santosh Mittal v. State of Rajasthan and others (Civil Writ Petition No 3105/2003). The High Court of Judicature for Rajasthan Jaipur Bench Jaipur-India (20 Oct 2004).

407 Miguel Ignacio Fredes González and Ana Andrea Tuczek Fries vs. Chile (No. 14/09 Petition

The SR shows the strong relationship between the right to food, its adequacy (in particular, its safety) and the GMs plants, biotechnology and food industry[408].

In a recent case in the Philippines, the precautionary principle has been applied with regard to transgenic crops used for human consumption. Field trials of GM crops were banned until a new administrative order on biosafety was adopted. Drawing on research and case studies from around the world and expert's opinions, the Supreme Court ruled that "the uncertainties generated by conflicting scientific findings or limited research is not diminished by extensive use at present of GM technology in agriculture [...][409] At the end, the Court presents the utility of the application of this principle stating that "[t]he precautionary principle bridges the gap in cases where scientific certainty in factual findings cannot be achieved. By applying the precautionary principle, the court may construe a set of facts as warranting either judicial action or inaction, with the goal of preserving and protecting the environment [...] In effect, the precautionary principle shifts the burden of evidence of harm away from those likely to suffer harm and onto those desiring to change the status quo. An application of the precautionary principle to the rules on evidence will enable courts to tackle future environmental problems before ironclad scientific consensus emerges"[410].

406-03 Admissibility) Inter American Commission on Human Rights (19 Mar 2009).

408 Please, refer to Chapter 4.B.5.b.

409 Supreme Court of Philippines Manila December 8, 2015 International Service for the Acquisition of Agri-Biotech Applications, Inc. v. Greenpeace Southeast Asia (Philippines), G.R. Nos. 209271, 209276, 209301 & 209430 (8 de diciembre de 2015) Page 70.

410 Ibid. page 100.

b. The Particular State obligations

The special State obligations regarding food are specified in article 11.2 ICESCs.

a) The state parties should take measures to "improve methods of production, conservation and distribution of food by making full use of technical and scientific knowledge, by disseminating knowledge of the principles of nutrition and by developing or reforming agrarian systems in such a way as to achieve the most efficient development and utilization of natural resources";

The obligation is well-defined: the improvement of the methods of production, conservation and distribution of food. To achieve this, the State should adopt 3 measures:

The first one is taking into account the available scientific knowledge and technology. In this regard there is global concern about the dangerousness to human health and the environment of certain pesticides, and several studies exist that present empirical evidence of these negative effects, as has been shown at length throughout this work.

In the case of Argentina, several indicators point at the unwillingness of the state to take these seriously. On the one hand, the few institutional tools available have gone unutilized for the most part[411]. On the other hand, international and national scientific studies are ignored and the State has been found to take no action in this front.

The use of technology has direct relation with the GMOs crops. But it would be necessary to evaluate whether the available technology is accessible by all the farmers or only by those who

411 Among other, the lack of activity of the NCAR or the use of the analysis of risks.

have extensive crops and then, also evaluate the existence of an indirect discrimination in this sense.

The second measure consists of disseminating knowledge of the principles of nutrition whichhas already been dealt with in Chapter 6 of this section.

The last measure emphasizes efficiency and the relation with agrarian reforms412. In this sense, the efficiency in the use of technology and knowledge must be addressed towards the improvement of methods of production, conservation, and distribution of food, but without setting aside that the food in question must be adequate. Moreover, an evaluation of the meaning of 'efficiency' is required, involving and considering at the same level the concept of equity, distribution and the access of land413. It is important noting that Argentina is one of the few Latin-American countries which has not had an agrarian reform. This is mirrored in the orientation given to public policies, which incentive the exportation of commodities as well as the extensive crops in contraposition of sustainable small scale agriculture, as

412 Basically, an agrarian reforms has the goal of "the redistribution of property or rights in land for the benefit of the landless, tenants and farm laborers" *(* Warriner, D., Land Reform in Principle and Practice *(*Clarendon Press*:* Oxford, 1969*)*..There are also different types of land reforms, depending the place and the characterization. The Latin-American agrarian reforms are focused in the tenure, the re-distribution of lands and the monopolies*:* the latifundios.

413 Philip Alston and K. Tomaševski, eds., The Right to Food, International Studies in Human Rights *(*Boston*: [*Utrecht*]:* M. Nijhoff*;* Stichting Studie- en Informatiecentrum Mensenrechten, 1984*)*. Page 190.

promoted by the UN Millennium Project[414] [415]. In this regard, the UN Secretary General on the Right to Development has affirmed that the full realization of the ESC rights is not possible without social justice. This denotes the need for a deep change of the economic and political power structure in all the national levels416, which in the Argentine case is difficult to imagine without the pending agrarian reform. This concern was also expressed by the SR on the Right to Food: the agrarian reforms and access to land are "key parts" on the realization of the right to food417.

Lastly, it is important to mention that a good utilization of the natural resources implies taking actions to satisfy the principle of sustainability. Monocultures and the technique of direct sowing must be accompanied by rotation of crops, especially when those crops are being planted extensively. Accordingly, the enforcement and promotion of small scale production is a step towards the realization of a full agrarian reform. Additionally, a national norm regulating land-use is needed to allow for compliance with this principle.

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414 Fernando P. Carvalho, "Agriculture, Pesticides, Food Security and Food Safety," Environmental Science & Policy 9, no. 7–8 (November 2006): 685–92, doi: 10.1016/j.envsci.2006.08.002. Pages 685-692.

415 UN Millennium Project (2005). Investing in development: a practical plan to achieve the millennium development goals. United Nations Millennium Project. Available at: http://www.unmillenniumproject.org.

416 Alston and Tomaševski, The Right to Food. page 191 -See also: United Nations, ed., Realizing the Right to Development: Essays in Commemoration of 25 Years of the United Nations Declaration on the Right to Development (New York: United Nations, 2013).

417 UN General Assembly, "The Right to Food." A/57/356 27 August 2002 (Paragraph 31).

b) Taking into account the problems of both food-importing and food-exporting countries, to ensure an equitable distribution of world food supplies in relation to need.

This is directly related to the prior obligation and the structural implementation of public policies tending to re-distribution, equity of access, and the necessity of an agrarian reform. On a short-term basis, the question is how the State can guarantee the full supply of food, but this falls beyond the scope of this study.

To conclude, the former SR on the Right to Food firmly supports the change of direction in agriculture, saying that "... [S]tates should implement public policies supporting the adoption of agro- ecological practices..."[418] as well as the current SR, who states that "[t]oday's dominant agricultural model is highly problematic, not only because of damage inflicted by pesticides, but also their effects on climate change, loss of biodiversity and inability to ensure food sovereignty. These issues are intimately interlinked and must be addressed together to ensure that the right to food is achieved to its full potential. Efforts to tackle hazardous pesticides will only be successful if they address the ecological, economic and social factors that are embedded in agricultural policies"[419] The achievement of an agro-ecological system is also a challenge[420]. Similar considerations led Bhutan

418 Human Rights Council, "Report Submitted by the Special Rapporteur on the Right to Food, Olivier De Schutter" (A/HRC/16/49, December 20, 2010). Paragraph 44.

419 Human Rights Council, "Report of the Special Rapporteur on the Right to Food" (24 January 2017) A/HRC/34/48 Paragraph 105.

420 "Agroecology is the science of applying ecological concepts and principles to the design and management of sustainable food systems. It focuses on the interactions between plants,

to develop a plan to eradicate agrochemicals -both fertilizers and pesticides- by 2020 [421], as part of its "Gross National Happiness program".

animals, humans and the environment. Agro ecological practices work in harmony with these interactions, applying innovative solutions that harness and conserve biodiversity. Agroecology is practiced in all corners of the world, with the traditional and local knowledge of family farmers at its core. Through an integrative approach, agroecology is a realm where science, practice and social movements converge to seek a transition to sustainable food systems, built upon the foundations of equity, participation and justice" in: FAO (2015) Agroecology for Food Security and Nutrition Proceedings of the FAO International Symposium (18-19 September 2014, Rome, Italy).

421 See: Sonam, Tashi The Prospects of Organic Farming in Bhutan. (2015) Available: http://www.zef.de/module/register/staff_details.php?pk=1122 and http://www.theguardian.com/sustainable-business/bhutan-organic-nation-gross-national-happiness-programme

OPEN ISSUES

The theme here approached is broad, and thus could not be covered in full throughout this master thesis, or else fell beyond its scope. Hence, various derivations of these points invite further research.

Firstly, the responsibilities of other stakeholders are crucial to a complete study in the protection of HRs. Only States can be held responsible for the violation of HRs in the current System. As a consequence, from an international level it is not possible to hold private corporations to account beyond 'soft law' recommendations, minimum standards, or guidelines, which work more as a persuasive instrument[422]. The problem is also political since States which could enforce laws and policies, are unwilling or unable to do so due to economic and politic pressures. In sensitive matters like the topic in question, transnational companies impose their own interests over people`s rights. Then, the oligopoly over seeds and other agricultural inputs make necessary of research in deep other topics: intellectual property issues, and the related issues of confidentiality and relativity of those rights. The major issue: individuals are the weakest part in the trilogy corporations - State -individuals.

Other key issue related is the liability of States where the transnational corporations have their headquarters. The

422 ILO Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy. Guiding Principles on Business and HRs *(2011)*. OECD Guidelines for Multinational Enterprise.

extraterritorial obligation of States in environmental matters and the realization of HRs, especially regarding agrochemicals and GM-production and the effectivity and the enforcement of the applicable normative framework in the matter[423].

In addition, the responsibility of international financial institutions such as the World Bank, is critical. The WB determines economic policies of States through conditionalities attached to their loans aimed at reducing poverty. This can exert direct influence over, for instance, food security, yet the WB explicitly deflects any responsibility for the state´s HR policies through the so-called "operational clause", which acknowledges strictly macro-economic criteria for decision-making[424], and which contradicts other clauses regarding responsibility of the WB for HR policies of debtor countries[425]. The question arises on whether the WB may be held responsible of HR-breaching under the current regime, and what mechanisms are available to this purpose.

The individual responsibility of the State`s agents as decision-makers is necessary. Setting aside the "organ theory" and making them responsible for the realization on HRs– especially in ESCs– would be essential to a deep change of the structural paradigm of responsibilities.

Moreover, the examination of the role of the international community as a whole in protecting HRs from possible violations by States and transnational companies is vital.

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423 United Nations Charter (Arts. 55 and 56), the UDHR (Arts. 22 and 28), ICCPR (Arts. 2 (1) and 11), the CRC (Arts. 4 and 24 (4)), etc.

424 IBRD Articles of Agreement (Art.4 Section 10) (June 27, 2012).

425 IBRD Operational Clauses: Indigenous People (OP4.10), Pest Management (OP4.09) Environmental Assessment (OP4.01), and the Involuntary Resettlement (OP4. 12).

Secondly, the study of other specific social groups at-risk would-be part of a complete analysis. The vulnerability of HRs defenders is a concern when they oppose big economic interests. Minorities like the case of indigenous people who are displaced from their lands, and the eviction that occur in the situation is a reality in developing countries that involve responsibilities of all the stakeholders.

At last, other topics should be considered to a complete exploration of this matter. On one side, the study of the (potential) emergence of new types of crimes (e.g. ecocides) and/or novel application of existing types (e.g. considering human and environmental damages carried out by corporations as well as by the concurrence of the State[426] as crimes against humanity); on the other, the responsible stakeholders on the production of GMOs and its interference in the struggle against Climate Change would be strongly significant.

426 The company Monsanto is going to carry a trial before the International Court next October2016 because of the vast human and environmental injured caused by its products. The announcement was made in the Paris Summit (Dec 2015).

CONCLUSION

This investigation ratified the hypothesis that in most of the legal cases and analysis regarding the use of pesticides and GMs production the focus is set exclusively on the right to health and the quality of the environment, to the detriment of another extremely significant dimension: the affectation of the right to food as corollary of food security. Furthermore, in considering the right to information (Art.19 ICCPR) – indispensable for the full realization of the ESCRs in general, and of the right to health and food in particular – this research also has shown that it is not been given due consideration when it comes to the protection of the right to health and food, on the one hand; and that there exist (potential) conflicts with other related issues, such as confidentiality and intellectual property rights.

A central question is who the affected people are. The few existing judicial cases, as well as the awareness-raising protests by social movements, seem to call the attention of a part of the population, usually when the damages have already been produced in areas where the crops production and the application of pesticides have increased, affecting directly the right to health and the quality of the environment. Nonetheless, certainly the general population is also being affected, although more indirectly. In Argentina, the majority of the population consume GM-vegetables and fruits treated with pesticides. Hence their rights are being affected in more than one way: not only does

the State fail to respect, protect and fulfil said rights as a result of, for example, lack of control or regulation; but the individuals are not even aware of this, as they lack access to due information that would allow them to choose (Art.19 ICCPR) what they eat or the water they drink. In addition, there are indicators that particular social groups such as indigenous peoples and lower classes are especially vulnerable to this breaching in the rights to adequate food and health.

The traditional solution-approach is to take the State to court for the violations of HRs. This is the obvious course of action from a perspective of legal responsibility, as results from the analysis of situation-law-obligations. However, empirical evidence of an accumulating body of research suggests that keep suing States as a way of improving the realization of the rights to food and health would be a rather naïve strategy: Indeed, a deeper understanding of the problem demands taking structural systemic interlinkages and path-dependencies into account, which has led international expert organizations such as the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD)[427], and the FAO[428] - as well as the former SR on the right to food, Olivier De Schutter[429] - to recommend a reversal of the world-wide trend from the`70s onwards towards

427 International assessment of agricultural knowledge, science and technology for development (IAASTD) (2008) Agriculture at a Crossroads- Global Report (South Africa).

428 FAO Agroecology for Food Security and Nutrition Proceedings of the FAO International Symposium (18-19 September 2014, Rome, Italy, 2015); FAO Final Recommendations of the Regional Seminar on Agroecology in Latin America and the Caribbean (Brazil June 24th- 26th, 2015).

429 Human Rights Council, "Report Submitted by the Special Rapporteur on the Right to Food, Olivier De Schutter". Paragraph 44.

increasingly extensive industrialized agriculture, which depends on agrochemicals that degrade the soil and pose serious hazards to human health. In the case of Argentina, to which this research was devoted, the situation is aggravated due to the fact that industrialized agriculture (particularly soya) represents a substantial source of fiscal incomes, thus creating a conflict of interests on the side of the State. This is, in turn, aggravated in an industry where a few transnationals companies have the global oligopoly on seeds and agrochemicals.

If the above holds, guaranteeing the realization of the most fundamental HRs in Argentina would ultimately require overcoming the country´s dependence on industrialized agriculture. To this purpose, I will broadly outline short-term, medium-term and long-term measures.

As short-term measures, Argentina should take the necessary measures to fulfill the obligations examined above, especially those referred to legislation and institutions. In the international sphere Argentina should fulfill the process of ratification of the treaties in the matter. Even though Argentina is one of the States that has incorporated the greatest number of HRs treaties in general, it was found that fundamental treaties in the matter are not ratified: (1) Cartagena Protocol on Biosafety and (2) the International Treaty on Plant Genetic Resources for Food and Agriculture. In addition, potentially problematic stipulations might have to be revised. In particular, I analyzed the case of the ratification of the Stockholm Convention on Persistent Organic Pollutants, where Argentina made the reserve to approve each amendment to the annexes in a separate act, which denotes the intention to satisfy commercial and economic interests in detriment of other protected legal rights.

In the national sphere, Argentina needs a national law of agrochemicals and GMOs. This would improve the juridical stability. Moreover, the absence of this law threatens to violate the division of powers: the fact that resolutions and decrees are the only existing norms in the matter at national level implies that the Executive branch (thorough expert bodies, in this case, SENASA) is in charge of regulating in the matter with no legislative oversight.

The fulfilment of international obligations and the adoption of adequate legislation would solve another serious problem: The absence of governing principles in the matter in the juridical structure of Argentina. The precautionary principle – while present in the environmental legislation – has no application during the phase of evaluation of pesticides and GMs seeds prior to their introduction to the market, unlike in other countries such as those within the EU. Furthermore, the precautionary principle has also not found application in the cases of violation of the adequacy of food and the subsequent health affectation. On the contrary, the principle has had judicial applicability in cases of fumigation[430], unfortunately this applies only to cases when the damage has already affected a group of people, and the goal is to prevent it from extending.

The use of pesticides presents risks in its different stages, breaching Art.12.1 ICESCR[431] which can be corrected in a short-term. The absence of adequate control of the State, absence of

430 Cavigliano Peralta, Viviana c/Municipalidad de San Jorge y ots. s/Amparo" (No. 208/09) Juzgado de Primera Instancia de Distrito N° 11 en lo Civil, Comercial y Laboral de San Jorge, Provincia de Santa Fe- (10 Jun 2009); Monsalvo, Cristina y otros c/ Delaunay, Jorge es/ amparo -Corte Suprema de la provincia de Buenos Aires- (8 agosto 2012).

431 See Chapter VII.B.1.2.

coordination between the national, provincial, and municipal levels, as well as the subsequent lack of sanctions should be revised. The normative elements are affected from various perspectives in terms of the analysis of the preconditions of health. Within these, the dimension of safety is the most affected due to the lack of legislation, limitations, and control by the State in the use of pesticides. In addition, the rules regarding the registration and evaluation process present serious deficiencies. Another deficiency is the lack of labeling of GMOs (justified through the principle of substantial equivalence). As a corollary of it, the particular obligations under Art.12.2 are allegedly violated.

In the accomplishment of Art.11.1 ICESCR the adequacy of food is allegedly violated, as a result of the contamination of crops and water with pesticides and of the extensive use of GM cultures. The absence of adequate labels affects also the right to information (Art.19 ICCPR). In addition, particular obligations of Art.11.2 ICESCR are affected: The dismissal of scientific knowledge which informs of the dangerousness of pesticides and GMs, the nonexistence of legally mandated agrarian reforms and the subsequent threats to food security would make Argentina responsible under Art.11.2 ICESCR.

As medium-term measures, Argentina should adopt more tools to improve the effectiveness of the protection, for example the creation of a specialized court on environmental and HRs matters.

Furthermore, the balance between formality and substantiality should be revised for a more effective protection of HRs: An extremely well-founded case presented before the Argentine Supreme Court of Justice, which petitioned to take actions relative to glyphosate, was dismissed due to the lack of admissibility

requirements[432]. Formalities must serve the realization of right, and ultimately to do justice, and not vice versa.

Additionally, the availability of public programs aimed at education, information, risk evaluation, etc. are limited or do not work. Properly working education programs, datasets, etc. are required to create political conditions for a paradigm shift towards a new agricultural system.

An issue that deserves greater attention and should be carefully analyzed are possible situations that may involve some grade of indirect discrimination on the ground of property and/or the economic and social situation to which State action (or inaction) might be leading to by privileging the rights of certain subjects – companies, producers, investors, etc. – to the detriment of the rights to food and health of other groups or the general population. Once the situation has been established, the non-discrimination principle must have immediate realization. This should amend in a transversal way.

Lastly, long-term measures must address structural dimensions in public policies on agriculture. Nowadays the general agricultural public policy prioritizes the production, productivity and competitiveness of all sectors of agroindustry. This is not possible without the increment of extensive and intensive crops. Consequently, the use of pesticides is incremented and incentivized by the government itself, which produces present and future environmental damages, puts food security at risk and subsequently threatens HRs – particularly to health, food and

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432 Asociación Argentina de Abogados Ambientalistas c/ Buenos Aires, Provincia de y otros s/ amparo ambiental (A. 262. XLV) -Corte Suprema de Justicia de la Nación Argentina- (1 de noviembre de 2011).

life. Instead, the priority of public policy should be guaranteeing these rights for the general population, which – according to the aforementioned of IAASTD and FAO reports – would require a re-orientation of agricultural policy towards small-scale, multi-functional and locally oriented farming that uses and builds on traditional knowledge.

In conclusion, it can be affirmed that Argentina is in violation of Art.11 ICESCR, Art.12 ICESCR, and Art.19 ICCPR. It urges to take short-term measures to prevent the negative impacts of these HRs violations from extending. Nonetheless, a complete change of structural policies demands the realization of medium and long term actions. The continuation of an agro-industrial business which is concentrated in a few hands and with the main goal of increasing profits becomes unsustainable with regard to achieving food security and the subsequent realization of the abovementioned rights. Hence, a deep re-orientation of agricultural public policies is imperative for a complete protection of HRs.

ANNEXES

ANNEX 1
VARIETIES OF GMOs AUTHORIZED IN ARGENTINA: characteristics, proprietary companies and the corresponding regulation

The table depicts the type of GM authorized in Argentine. View from left to right, the first column informs the type of GM. The second and third file portrays the corresponding introduced feature and the code of transformation event of the GM variety. At last, files fourth and fifth indicates the name of the proprietary company and the corresponding resolution of approval.

Especie	Característica introducida	Evento de transformación	Solicitante	Resolución
Soja	Tolerancia a glifosato	40-3-2	Nidera S. A.	SAPyA N° 167 (25-3-96)
Maíz	Resistencia a Lepidópteros	176	Ciba-Geigy S.A.	SAGPyA N° 19 (16-1-98)
Maíz	Tolerancia a Glufosinato de Amonio	T25*	AgrEvo S.A.	SAGPyA N° 372 (23-6-98)
Algodón	Resistencia a Lepidópteros	MON531	Monsanto Argentina S.A.I.C.	SAGPyA N° 428 (16-7-98)
Maíz	Resistencia a Lepidópteros	MON810	Monsanto Argentina S.A.I.C.	SAGPyA N° 429 (16-7-98)
Algodón	Tolerancia a glifosato	MON1445	Monsanto Argentina S.A.I.C.	SAGPyA N° 32 (25-4-01)
Maíz	Resistencia a Lepidópteros	Bt11	Novartis Agrosem S.A.	SAGPyA N° 392 (27-7-01)
Maíz	Tolerancia a glifosato	NK603	Monsanto Argentina S.A.I.C.	SAGPyA N° 640 (13-7-04)

Maíz	Resistencia a Lepidópteros y tolerancia a Glufosinato de Amonio	TC1507	Dow AgroSciences .y Pioneer Argentina	SAGPyA N°143 (15-03-05)
Maíz	Tolerancia a Glifosato	GA21	Syngenta Seeds S.A.	SAGPyA N°640 (22-08-05)
Maíz	Tolerancia a glifosato y resistencia a Lepidópteros	NK603xMON810	Monsanto Argentina S.A.I.C.	SAGPyA N°78 (28-08-07)
Maíz	Resistencia a Lepidópteros y tolerancia a Glufosinato de Amonio y Glifosato	1507xNK603	Dow AgroSciences y Pioneer Arg S.A	SAGPyA N°434 (28/05/08)
Algodón	Resistencia a Lepidópteros y Tolerancia a glifosato	MON531x-MON1445	Monsanto Argentina S.A.I.C.	SAGPyA N°82 (10/02/09)
Maíz	Tolerancia a glifosato y Resistencia a Lepidópteros	Bt11xGA21	Syngenta Agro S.A.	SAGPyA N°235 (21/12/09)
Maíz	Tolerancia a glifosato y Resistencia a Coleópteros	MON88017	Monsanto Argentina S.A.I.C.	SAGPyA N°640 (07/10/10)
Maíz	Resistencia a Lepidópteros	MON89034	Monsanto Argentina S.A.I.C.	SAGPyA N°641 (07/10/10)
Maíz	Tolerancia a glifosato y resistencia a Lepidópteros y Coleópteros	MON89034 x MON88017	Monsanto Argentina S.A.I.C.	SAGPyA N°642 (07/10/10)
Maíz	Resistencia a Lepidópteros	MIR162	Syngenta Agro S.A.	SAGPyA N°266 (19/05/11)
Soja	Tolerancia a glufosinato de amonio	A2704-12	Bayer S.A.	SAGPyA N°516 (23/08/11)
Soja	Tolerancia a glufosinato de amonio	A5547-127	Bayer S.A.	SAGPyA N°516 (23/08/11)
Maíz	Resistencia a Lepidópteros y tolerancia a glifosato y a glufosinato de amonio	Bt11xGA21x-MIR162	Syngenta Agro S.A.	SAGPyA N°684 (27/10/11)
Maíz	Tolerancia a glifosato y a herbicidas que inhiben la enzima acetolactato sintasa	DP-098140-6	Pioneer Argentina S.R.L.	SAGyP N° 797 (01/12/11)

Maíz	Resistencia a Lepidópteros y a Coleópteros y tolerancia a glifosato y a glufosinato de amonio	Bt11xMIR162x-MIR604xGA21 y todas las combinaciones intermedias	Syngenta Agro S.A	SAGyP N° 111 (15/03/12)
Maíz	Resistencia a Coleópteros	MIR604	Syngenta Agro S.A	SAGyP N° 111 (15/03/12)
Maíz	Resistencia a Lepidópteros y tolerancia a Glufosinato de Amonio y Glifosato	MON89034x-TC1507xNK603	Dow AgroSciences y Monsanto Argentina S.A.I.C	SAGyP N° 382 (23/07/12)
Maíz	Resistencia a Lepidópteros y tolerancia a Glifosato	MON89034xNK603	Monsanto Argentina S.A.I.C	SAGyP N° 382 (23/07/12)
Soja	Resistencia a Lepidópteros y Tolerancia a glifosato	MON87701x-MON89788	Monsanto Argentina S.A.I.C	SAGyP N° 446 (10/08/12)
Soja	Tolerancia a herbicidas de la clase de las imidazolinonas	CV127	BASF Argentina S.A.	SAGyP N° 119 (07/03/13)
Maíz	Resistencia a Lepidópteros y tolerancia a glufosinato de amonio y glifosato	TC1507x-MON810xNK603 TC1507xMON810	Pioneer Argentina S.R.L.	SAGyP N° 417 (15/10/13)
Maíz	Resistencia a Lepidópteros y tolerancia a glifosato y a glufosinato de amonio	Bt11xMIR162x-TC1507xGA21 y todos los acumulados intermedios	Syngenta Agro S.A.	SAGyP N° 88 (11/04/14)
Soja	Tolerancia a 2,4 D, glufosinato de amonio y glifosato	DAS-44406-6	Dow AgroSciences Argentina S.A.	SAGYP N° 98 (09-04-15)
Papa	Resistencia a virus	SY233	Tecnoplant S.A.	SAGyP N° 399 (01/10/15)
Soja	Alto contenido de ácido oleico y tolerancia a glufosinato de amonio y glifosato	DP-305423 x MON-04032-6	Pioneer Argentina S.R.L.	SAGyP N° 398 (01/10/15)
Soja	Resistencia a sequía	IND410 (Hb4)	INDEAR S.A.	SAGyP N° 397 (01/10/15)
Algodón	Tolerancia a glifosato y a glufosinato de amonio	BCS-GHØØ2-5 x ACS-GHØØ1-3 GHB614xLLCotton25	Bayer S.A.	SAGPyA N° 503 (02/11/15)
Maíz	Resistencia a Lepidópteros y tolerancia a glufosinato de amonio y a glifosato	TC1507x-MON810x-MIR162xNK603	Pioneer Argentina S.R.L	Resolución SAV N° 25 (28/03/16)

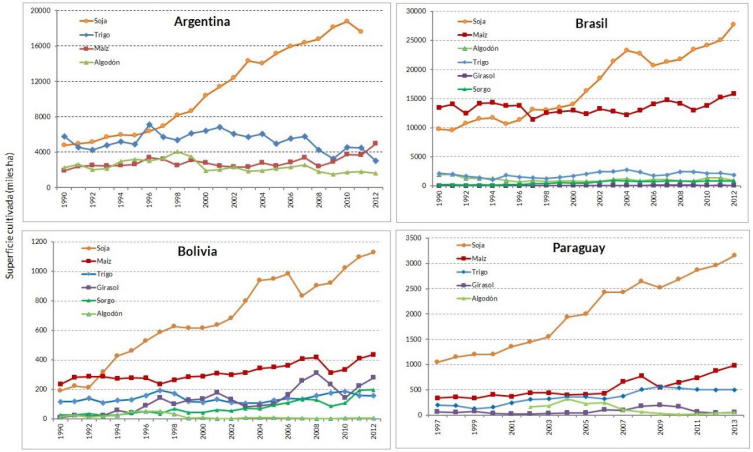
Soja	Tolerancia a glifosato	MON-89788-1	Monsanto Argentina S.R.L	**SAV N°59** *(27/07/16)*
Soja	Resistencia a Lepidópteros	MON-87701-2	Monsanto Argentina S.R.L	**SAV N°59** *(27/07/16)*
Maiz	Resistencia a Lepidópteros y tolerancia a glufosinato de amonio y a glifosato	MON-89034-3 x DAS-01507-1 x MON-00603-6 x SYN-IR162-5	Dow AgroSciences Argentina S.R.L.	**SAV N° 85** *(31/10/16)*
Soja	Resistencia a Lepidópteros y tolerancia a glufosinato de amonio y a glifosato	DAS-81419-2 x DAS-444Ø6-6 y DAS-81419-2	Dow AgroSciences Argentina S.R.L.	**SAV N° 84** *(31/10/16*
Maíz	Resistencia a Lepidópteros y tolerancia a glufosinato de amonio y a glifosato	SYN-BT011-1 x SYN-IR162-4 x MON-89034-3 x MON-00021-9	Syngenta Agro S.A.	**SAV N° 96** *(17/11/16*
Soja	Con tolerancia a los herbicidas a base de glufosinato de amonio e inhibidores de la enzima p-hidroxifenilpiruvato dioxigenasa *(HPPD)*	SYN-000H2-5	Syngenta Agro S.A. y Bayer S.A.	**RESO-2017-83-APN-SECAV#MA** *(17/11/17)*
Cártamo	Con expresión de pro-quimosina bovina en semilla	IND-10003-4, IND-10015-7, IND-10003-4 x IND-10015-7	INDEAR	**RESOL-2017-103-APN-SECAV#MA** *(07/12/17)*

Source: Ministry of Agro Industry[433]

433 Available at: http://www.agroindustria.gob.ar/sitio/areas/biotecnologia/ogm/.

ANNEX 2
AREA SOWN WITH SOYA, WHEAT, MAIZE AND COTTON IN ARGENTINA, BRAZIL, BOLIVIA AND PARAGUAY

The images show the area sown by soya, wheat, maize and cotton have progress in the period from 1990-2012. The cultivated area of soya has grown exponentially in comparison with the other three crops varieties[434].



Source: Observatorio de Socio Ambiental de la Soja[435].

434 It recalls that in 1996 the soya 40-3-2 or also called RR Soybean with the characteristic of being entered to Argentina under SAGPyA Resolution. Monsanto-the owner company-negotiated the entrance of those seeds with local firms, such as Asgrow, Nidera o Syngenta. This fact helped that the seed would be able to be expanded for all the territory and also in neighboring countries like Paraguay, Bolivia and Brazil.

435 Available at: http://observatoriosoja.org/dato-regional/cambio-en-la-superficie-sembrada-con-soja-y-relacion-con-otros-cultivos-2/ *[Last entry: 12 March 2016,12:31p.m.].*

ANNEX 3
AGROCHEMICALS: INSTITUTIONS AND REGISTRATION PROCEESS IN ARGENTINA

National Service of Health and Agri-Food Quality (SENASA) (decentralized organism under controlled by the agro-industrial ministry, inside the executive national branch).	Institution with authority to apply and execute the normative framework of agrochemicals. Among other functions, it is in charge of: - Elaborating the norms that ensure the accomplishment of the Argentine Food Code[436] as well as the international normative in the matter. - Executing the national public policies in all aspects related with quality and safety of animals and vegetables. - Verifying the fulfillment of the rules. - Establishing conditions for the use of agrochemicals - Ruling the MRL values, (Maximum Residue Limit or Tolerance), that is, the maximum concentration of residue of a legally permitted pesticide, in products and by-products of agriculture.
National Administration of Medicines, Food and Medical Technology (ANMAT) (technical organism under the dependence of the Ministry of Health)	Institution with the competence to register and authorize the commercialization, suspension and cancellation of agrochemicals as domiciliary use.
The National Direction of Agrochemicals, Veterinary Products and Food (DNAPVyA)[437]	Functions: - Elaborating, applying and monitoring the regulatory compliance.

436 Argentine Food Code(CAA)-created by Act 18.248, and regulated by Decree 2126/71.

437 A department of SENASA.

Direction of Agrochemicals and Biology (DIRABIO)[438]	Functions through its specialized dependences (Pesticides, Fertilizers, Confidentiality, Technical Audit, Import and Export): 1 Registering, logging and auditing institutions that manufacture and/or formulate pesticides, as well as it has the task of proposing the list of any natural or legal person or object to be registered within their jurisdiction. 2 Performing technical evaluations of the documentation submitted for approval and registration of active ingredients and/or formulated products, agrochemicals and amendments[439]. 3 Proposing restrictions or the prohibition of plant protection products, fertilizers and soil for agricultural use. 4 Proposing qualifying periods and tolerances for all waste or contaminants derived from the use of pesticides. 5 Caring for all the formalities involved in importing and exporting of chemicals and biological substances. The duty of registering a pesticide should result from the following provisions[440]. The registration is responsibility of the legal or natural person, who has the duty to present an affidavit together with labs tests. One of the main requirements of the registration is that the products are not older than fifteen years from the date of registration, otherwise they must also have a guarantee of the toxicological profile, clarifying that the product composition has not been modified[441]. Once completed the registration process, a Certificate of Use and Marketing that enables to use and sell the authorized product throughout the country is provided. It is important to note that not only the product must be registered but also all the individual and legal persons who use and commercialize, import and export the products as well as the factories which create those products have to register it [442] [443].

438 A department of SENASA created by SENASA Resolution 805/11

439 To this regard the DIRABIO delegate the realization of this task with a Red of Laboratories (Decree 736/06). They are the legal responsible of the results. The DIRABIO Laboratory endorse their results.

440 The National Register of Plant Therapy should be in accordance with the provisions of Decree No. 3489/58 and Decree No. 5769/59, under the terms of the "Manual of Procedures, Criteria and Scope for the Registration of Crop Protection Products in the Argentine Republic", approved by Resolution N ° 350/99 and modified by Resolution N° 320/12. The last one changes particularly the toxicology classification of the products and establishes the procedures of the registration.

441 Besides, all the registrations must follow the guidelines of the Organization for Economic Cooperation and Economic Development (OECD) on acute oral toxicity, acute dermal, inhalation classification, dermal irritation, eye irritation and skin sensitization.

442 Information taken from the official page: www.senasa.gov.ar

443 The applicable rules are: Decree 3489/58, Decree 5769/59, SAGyA Resolution 350/1999, SENASA Resolution 546/2005, SENASA Resolution 367/2014, SENASA Resolution 822/2011, SENASA Resolution 6/2002, SENASA Resolution 45/2001, Resolutions 1562/2010 and 340/2010, Resolution 299/2013, Resolution 481/2014.

	With this purpose the Joint Disposition N° 253/64 rules the registration of agrochemicals companies of aerial and land applications in all the national territory. An extraordinary procedure stated under the SENASA Resolution No.350/99[444]. It rules the attribution to analyze products previously registered with the purpose of habilitate a re-evaluation of any given product when representing a serious risk on humans and is based on effects demonstrated, or it can produce an adverse modification, destruction and a threat to the environment. Once the related authority establishes the necessity to re-evaluate an agrochemical, it must communicate to the registered companies which have a limited time of period to provide all what is required including new tests. In this process the SENASA may invite different stakeholders including citizens, civil society organizations, experts, and university researchers in the aim of collecting further empirical evidence in the form of studies and also consider all possible objections.
Federal System of Control of Agrochemicals and Biologics (SIFFA)[445]	Purpose: harmonizing the nation and provinces' rules and institutions. This system was designed to cope with the difficulties arising from the fact that the legislation and the regulations, including the registration of products, at the two levels vary to a great extent. The functions are the posterior control of the products that have been registered, with the purpose of granting the product traceability.
System of Control of Fresh Fruits and Vegetables (SICOFHOR)[446]	Functions: Determining the presence of pesticide residues in fresh fruits and vegetables[447].

444 SENASA Resolution No.350/99, Chapter 18.

445 SENASA Resolution 500/2003

446 Created by SENASA Resolution 637/2011

447 Other applicable regulations in this context are: Resolution No. 1230/2004 and Resolution No. 38/2012. The first one rules the traceability system implementing a system of tracking, monitoring, control and audit of plant protection products; while the second one develops the manual of procedures for violations of national service of health and food quality. In addition, the Act n° 20.418 establishes the tolerance and administrative limits of pesticide residues in products and sub-products of agriculture and livestock. The highest limit shall be indicated by the correspondent authority as so the control of it. Act n° 22.289 prohibits the manufacture, import, formulation and use of hexachlorocyclohexane and dieldrin products, independently of their trade name. The importance of this law lies on the fact that the Executive National Branch has the faculty to add other pesticides whose use causes the appearance of waste in products and sub-products of agricultural origin that exceed the practical tolerance limits set by the authorities (Act n° 22.289, Art. 1 and Art.1).The Act n°3489/58 rules the commercialization in all the territory of the Nation of chemical or biological products devoted to the treatment and control of enemies of animals and cultivated plants or plants(Act n°3489/58, Art.1)..

Federal Agricultural Council[448]	Counselling organism of the Executive branch - has in charge topics related with agriculture as well as the incidence of the decision in the area on regional and local economies.
National Commission of Agrochemicals Research[449]	Founded with the purpose of researching, preventing and assisting people exposed to agrochemicals in all the national territory. The main aim of this institution was promoting public health and environmental matters.

448 Created by law 23.843 -19 Oct 1990.

449 Created by Decree No.21/09.

ANNEX 4:
EVALUATION PROCESS OF GMOs IN ARGENTINA

The following institutions evaluate in a sequential process and in an independent fashion specific aspect of the GMOs and issue a non-binding resolution, which then are taking into consideration in the final decision issued by the Secretary of Agriculture, Livestock and Production-in the orbit of the Ministry of Agroindustry- (SAGyP) approving or refusing the liberation of the GMOs.

1°) National Direction of Biotechnology and National Council of Agricultural Biotechnology (CONABIA)[450] (under the orbit of the Secretary of Agriculture, Livestock and Production-(SAGyP) Ministry of Agroindustry	Function: assess the environmental impact in the introduction and the liberation of GMOs and also if their cultivation has the same impact than those no modified genetically [451]. The approval implies that the product of agricultural origin derived from a GMO is equivalent to its conventional counterpart based on the principle of substantial equivalence. (SAGyP Resolution No. 701/11)
2°) National Service of Health and Agri-Food Quality (SENASA) through its specialized experts: the "Technical Advisory Committee on the use of Genetically Modified Organisms" [452].	Function: food safety evaluation. The evaluation is specified in Resolution 412/02 del SENASA and is based on regulations institutes related to international organizations, including among others the FAO and the WHO.
3°) National Direction of Agrifood Market (DNMA) under the control of the SAGyP	Function: evaluating the impacts of the GMOs in the international market. (SAGyP Resolution No.510)

450 Created in 1991 by SAGyP Resolution 124/91.

451 These tasks are regulated in the following normative framework: Resolution No. 656/92 of SAGPyA; Resolution No. 837/93 SAGPyA (modified by Resolution 656/92), Resolution No. 289/97 of SAGPyA, Resolution No.701/11, Resolution N° 60/2007, Resolution N° 318/2013, Resolution No.656, Resolution No.17, Resolution No.241/12. These regulations are integrated into the overall regulatory system for the agricultural sector; Argentina existing regulations on plant protection under Decree Law of Health Protection of Agricultural Production No. 6,704 / 63, as amended, Act of seeds and plant breeding creations No. 20.247 / 73 and its regulatory decree; and Animal Health Veterinary Act, Control of producing and marketing the no. 13.636 / 49.

452 Created by Resolution SAGPyA 1265/1999.

EXCURSUS:
The structure of the global and Argentine market of agricultural inputs

Transnational companies increasingly tend to concentrate market control over agricultural inputs. Companies who lead the agrochemical market are the same who head the seeds-market as a result of the production of those inputs, but also because of the dependence produced in transgenic seeds with resistance to a specific pesticide. Companies such as Monsanto (recently absorbed by Bayer Crop Science), DuPont, Syngenta and Dow Agro Science not only lead the world market, but also control the world's main agro-industrial markets. These companies saw their profit rates skyrocketing with an aggregate increase of 350% over the last four decades: from 1975 till 2014 profits went from USD12 billion to USD53.8 billion, and are expected to reach USD 92 billion in 2020[453].

As it can be appreciated in the following table, there are a few companies who lead the seed market in the world with very high benefits, all settled in developed countries.

453 "Little Seed, Big Business" in Agro News (6 Nov. 2015) Information taken from: http://news.agropages.com/News/NewsDetail---16039.htm

Table 1 Sales and global market share of Top 10 seed companies in 2014			
Ranking	Company	Global market share	Sales of seed business (US$ bn)
1	Monsanto(U.S.)	20%	10.76
2	DuPont(U.S.)	15%	8.07
3	Syngenta(Switzerland)	6%	3.23
4	Groupe Limagrain(France)	3%	1.61
5	Land O'Lake(U.S.)	3%	1.61
6	KWS AG(Germany)	3%	1.61
7	Bayer Crop Science (Germany)	2%	1.08
8	Dow AgroSciences(U.S.)	3%	16.1
9	Sakata(Japan)	1%	5.4
10	DLF-Trifolium (Denmark)	1%	5.4
	Other Seed Companies	43%	231.3

Source[454]

The next table portrays the firms who lead the agrochemical market are the same who head the seed market. These companies are who control also the Argentinean market of transgenic seeds and agrochemicals[455]. In addition, the main agrochemicals buyer countries are USA, Brazil, Japan and Argentina in the fourth place[456].

454 Ibid.

455 See also Annex 1.

456 See: Global Agrochemical Market will continue to Maintain Steady Growth. *(28 Oct 2014)* Available at: http://news.agropages.com/News/NewsDetail---13349.htm

FY 2014 Agrochemical and Seed Sales in $M			
	2014 Agrochemicals Revenue [$M]		2014 Seed Revenue [$M]
Syngenta	11,381	Monsanto*	10,740
Bayer	10,257	DuPont	7,913
BASF	7,243	Syngenta	3,155
Dow Chemical	5,686	Vilmorin+	1,995
Monsanto*	5,115	Dow Chemical	1,604
DuPont	3,391	KWS+	1,567

Source[457]

In Argentina, Bayer-Monsanto on the one hand, Dow-Dupont in second term and then ChemChina had in Argentina the 54.3% of the total market, with joint sales of US $ 1348.5 million. In the fourth place of the Argentine market in 2016 was Bayer, with US $ 201 million (compared to US $ 208.2 million in 2015) and fifth was Atanor, with US $ 195.7 million (US $ 181.2 million in 2015).In the sixth place was the German Basf, with US $ 142.9 million; the seventh was DuPont, with US $ 131.4 million; eighth, national firm Red Surcos, with US $ 116.8 million; ninth, Agrofina, also of local origin, with US $ 115.7 million, and tenth, Adama, of the Chinese group ChemChina, with US $ 110.2 million[458].

457 Dow Chemical should stick to Agro Sciences (5 Nov 2015) Available at: http://news.agropages.com/News/NewsDetail---16262.htm

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