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TRANSITIONING TOWARDS PESTICIDE-FREE FOOD SYSTEMS: PEOPLE'S STRUGGLES AND IMAGINATION

FIAN INTERNATIONAL

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»To the people on the ground
who still dare to imagine.
To them and to us.
To keep imagining together
ways to transform the world
around us.«

Angélica

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FOREWORD

Pesticides are causing a global human rights and environmental catastrophe. They are responsible for an estimated 200,000 acute poisoning deaths each year. Long-term exposure can lead to chronic diagnoses like cancer; birth defects and reproductive harm; and abnormalities in the neurological, developmental, and immune systems. Runoff from pesticides applied to crops frequently pollutes the surrounding ecosystem and beyond, with deleterious ecological consequences that exacerbate the loss of biodiversity. Pesticides can also harm the biodiversity of soils, which can lead to large declines in crop yields, posing problems for food security.

Exposure to pesticides can have severe impacts on the enjoyment of human rights, including the rights to life, health, and a healthy environment. Failure to adequately control pesticides can also compromise the rights to science, food and nutrition, housing, and information. People may be exposed to pesticides and their residues through food, water, air, or direct contact. Persistent use of agrotoxics in industrial farming is correlated to a range of adverse health impacts, at both high and low exposure levels. 99% of pesticide poisoning deaths occur in developing countries, where health, safety, and environmental regulations, as well as implementation capacities, are weaker.

States have a duty to prevent exposure to hazardous substances. For instance, the right to adequate food and nutrition requires states to ensure access to food that is safe, free from pesticide residues and qualitatively adequate. These duties extend across borders, prohibiting the exportation of pesticides banned in wealthy states to poorer countries. States must also protect persons and groups in vulnerable situations, such as children, workers, women, persons with disabilities, and peasants.

To take on the human rights and environmental challenges posed by pesticides, agroecology is emerging as a holistic response. Agroecology is an integrated approach to agriculture that seeks to optimize the interactions between plants, animals, humans, and the environment to enable sustainable and fair food production based on local knowledge and traditional agricultural practices. This approach can help meet the global needs for food sovereignty and food security in a world facing the three-dimensional crisis of climate change, biodiversity loss, and toxification.

FIAN's study investigates how countries are transitioning to agroecology and pesticide-free food systems. By examining cases in India, Brazil, Argentina, France, Spain, Italy, and the United States (US), FIAN's study offers a clear diagnosis of the human rights and environmental problems resulting from pesticides. By anchoring its analysis in the UN Declaration on the Rights of Peasants and other People Working in Rural Areas, FIAN clearly identifies the opportunities and strengths offered by the human rights framework in terms of transitioning away from agrotoxics. In the end, FIAN's work provides a foundation for grassroots movements, local and state governments, and the international community to create pesticide-free societies that can uphold the right to a toxic-free environment for all.

Marcos Orellana

UN Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes

PROLOGUE

Since its founding at an international gathering of activists in Malaysia in 1982, PAN has worked towards a pesticide-free planet, campaigning to eliminate harmful pesticides and advance just and ecological solutions. PAN's founding activists recognized that threats to communities' well-being comes not only from the pesticides themselves, but from the power, influence and global reach of the corporations determined to profit from their sale. So we have long fought in local, national and global policy arenas to counter corporate capture of public institutions and policies. Our movement aims for systemic change, rooted in the experiences of communities directly impacted by the harms of agrotoxics and dedicated to building a future in which farmers', fishers', workers', women's and Indigenous people's rights to food, health, clean air and water, and dignified livelihoods are protected and upheld.

We have seen progress over the decades in the establishment of international agreements, UN codes and guidelines that prioritize reduced reliance on pesticides and removal of the most damaging ones. Nevertheless, according to a peer-reviewed systematic literature review conducted by PAN scientists in 2020, an estimated 44% of farmers and farmworkers – or 385 million people – are poisoned by pesticides annually. Meanwhile, evidence mounts that today's converging crises of climate change, biodiversity loss, global food insecurity and now, pandemics, are exacerbated by models of chemical-intensive agriculture, while human rights violations linked to pesticide use and exposure continue.

Today, as the global community faces the urgent need to tackle these planetary crises head-on, the corporations that benefit from sale of agrochemicals and other patented technologies are moving ever more aggressively into UN policy spaces. Their goal: a last-ditch effort to expand markets for their products while blocking global momentum to transition towards pesticide-free approaches. In 2020, for example, CropLife International – the global trade association of pesticide companies – convinced the UN Food and Agriculture Organization (FAO) to join them in a new formal partnership. Despite global outcry, FAO continues to retreat from its prior commitments to agroecology. At national levels, when countries such as Thailand and Mexico announce plans to phase out certain pesticides, backlash from the US government, acting on industry's behalf, is swift.

To counter these trends, PAN and partners collaborate globally to document, expose and publicize the harms of chemical pesticides and the egregious interference by corporations in public policy formation. We advocate for policies to reduce reliance on pesticides, ban highly hazardous pesticides and promote agroecological transformations. A growing number of countries now have pesticide restrictions in place, while the European Union is slowly responding to our demands to end the double standard by which Northern countries export banned pesticides to other countries.

Our collective strength as a global movement lies in the diversity of approaches and strategies taken up by different communities around the world. We are seeing the emergence of pesticide-free towns and territories; provinces and nation-states transitioning to organic farming; social movements led by peasant farmers championing agroecology; and Indigenous peoples teaching ways of being in right relationship to the land and earth.

In this context, we are delighted to welcome FIAN's report and its presentation of movement successes and transitions to pesticide-free food systems. The report demonstrates that transformation is not only possible, but is already happening. FIAN's presentation of a human rights framework for liberating ourselves from pesticide dependence and achieving pesticide-free territories, grounded in food sovereignty and agroecology, offers a powerful way forward for us all.

Marcia Ishii

PhD, Senior Scientist, Director Grassroots Science Program, Pesticide Action Network North America Chair, PAN International Agroecology Workgroup

1. INTRODUCTION

Pesticides play a key role in the food production system that aggravates inequalities, decreases food diversity, destroys the sovereignty of people over their territories, and fuels environmental collapse. The growing use of pesticides represents the failure of states to comply with their human rights obligations regarding the right to adequate food and nutrition (RTFN) and related rights, all the while working to support the corporate-driven agri-food model based on monocultures and agro-export.

The use of pesticides affects the RTFN in all its dimensions. It destroys productive resources, like soil, that are necessary to produce food, while contaminating the environment and causing harm to the health of people, animals, and the planet. It increases the concentration of land by agribusiness. It displaces populations, creates a loss of control over commons such as seeds, and often disrupts the traditional modes of food production and consumption, and the social fabric. It reduces locally available food production, exacerbates dependency on food imports as well as dependency of small-scale food producers on firms that sell technological packages. It is also associated with the criminalization of people, organizations and processes that push back against pesticides[1].

Agricultural workers' unions such as the International Union of Food, Agricultural, Hotel, Restaurant, Catering, Tobacco and Allied Workers' Associations (IUF) and peasants' movements, such as La Via Campesina (LVC), have been rallying for years against the intensive use of pesticides due to their impact on the enjoyment of the rights to health and to adequate food. These rights are enshrined in the International Covenant on Economic, Social and Cultural Rights (ICESCR) and detailed in the United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas (UNDROP), which clearly recognizes the right to work in safe and healthy working conditions in Article 14.1; and the right not to use or be exposed to hazardous substances or toxic chemicals, including agrochemicals or agricultural or industrial pollutants, in Article 14.2.

[1] For more information on human rights obligations regarding pesticides and on the impact of pesticides on the RTFN, please read FIAN's regional report Pesticides in Latin America: Report about violations against the right to adequate food and nutrition: https://www.fian.org/en/publication/article/pesticides-in-latin-america-2759

The Special Rapporteur on the Right to Food in collaboration with the Special Rapporteur on the implications for human rights of the environmentally sound management and disposal of hazardous substances and wastes presented a report on the impacts of pesticides on the enjoyment of the right to adequate food in 2017. This report underscores that "pesticides are responsible for an estimated 200,000 acute poisoning deaths each year, 99% of which occur in developing countries". The Special Rapporteurs therefore recommend, "a holistic approach to the right to adequate food that includes phasing out dangerous pesticides and enforcing an effective regulatory framework grounded in a human rights approach, coupled with a transition towards sustainable agricultural practices that take into account the challenges of resource scarcity and climate change."

Building on this report, organizations such as the Pesticide Action Network (PAN), Public Eye, and Earth Justice are currently promoting a global legal framework, which would include a binding treaty to phase out Highly Hazardous Pesticides (HHPs). These organizations invited FIAN to contribute to these efforts. FIAN is not an expert organization in monitoring the impacts of pesticides. Nevertheless, given the relevance of pesticides to the enjoyment of the RTFN, the present study represents an effort to strengthen the initiatives of civil society organizations advocating for effective legal and political measures to protect against pesticides and ensure a successful transition to healthy and sustainable food systems.

The objective of this study is to closely examine states' obligation to phase out and ban pesticides, and document some existing experiences to show that this is feasible, and to reflect on the challenges involved in implementing said obligation. While a summary or exhaustive compilation is not our aim herein, we do hope that these analyses and reflections contribute to strengthening the struggle of grassroots people and to all of us enjoying a pesticide-free future. With this in mind, this study aims to contribute to an understanding of food systems that is anti-hegemonic, in line with state human rights obligations, and which promotes food sovereignty and regeneration.

The present study is based on a qualitative social research paradigm. The research process consisted of a literature and document review, expert interviews, and human rights analysis. The main interview partners were Pesticide Action Network, the Brazilian campaign Campanha Permanente Contra os Agrotóxicos e Pela Vida, workers unions, researchers, investigative journalists, NGOs, and policymakers.

Bottom-up local experiences have a special place in this study because this is where people's everyday lives happen and where they have immediate contact with the state – the holder of the aforementioned human rights obligations. This wide range of experiences inform how people interact with the state and their visions for transforming their food systems, with the goal of influencing legal and policy processes at the national, regional and international level in favor of a pesticide-free planet.

The study starts with country snapshots that offer a mosaic of transitional experiences in places such as India, Brazil, France, Argentina, among others. Then, we present the different entry points and classify at least six approaches when analyzing people's struggles for transitioning to pesticide-free food systems, as well as the challenges they have been facing. Finally, we outline some strategies to overcome those challenges based on a progressive international human rights framework, including the novel »UNDROP«.

II. COUNTRY SNAPSHOTS

1. INDIA

India is plagued by a high use of pesticides, including HHP, and a growing trend towards monocultures. It is also known for pesticide self-poisoning among farmers as a common means of suicide[2], as well as accidents such as the gas leak in a pesticide plant in Bhopal in 1984[3] and a pesticide poisoning in Maharashtra in 2017[4].

At the same time, the literature about agroecological transitions highlights positive examples of transition at the state level in India, such as the case of Sikkim's organic transition, Andra Pradesh's Community Managed Natural farming[5], and the organic movement in Kerala.

THE HISTORICAL STRUGGLE AGAINST ENDOSULFAN[6]

The southwestern Indian state of Kerala is known for its successful campaign that led to the ban on the pesticide endosulfan in 2003, which was followed by a nationwide ban in 2011. Concerns surrounding endosulfan began in a community in northern Kerala in the 90s where government-owned cashew plantations had been using the pesticide since the late 70s. People started addressing the media and mobilizing. Eventually, growing national attention led the Delhi-based Centre for Science and Environment and the National Centre of Occupational Health to undertake investigations into endosulfan in Kerala, which found alarming results. Civil society and environmentalist movements began to collaborate at the state, national, regional, and international level and finally, the Supreme Court ruled in favor of the ban and it was introduced into law.

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[2] https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-020-8339-z

[3] https://www.britannica.com/event/Bhopal-disaster

[4] https://pan-india.org/indian-government-urged-to-push-through-with-total-ban-of-27-pesticides and https://frontline.thehindu.com/dispatches/victims-of-2017-pesticide-poisoning-in-maharashtra-file-cases-in switzerland-against-syngenta/article32729454.ece#!

[5] https://apcnf.in/

[6] Based on an interview with Usha Soolapani, Thanal, 2020

The campaign was successful because it included the media and different actors, such as politicians, civil society, students, and doctors. Awareness-raising through the media played a pivotal role and also generated lasting consequences: a high level of consumer awareness in the state.

PROJECT FOR THE NATIONAL BAN OF 27 PESTICIDES: A CONTRADICTION OF DOUBLE STANDARDS[7]

There are almost 300 pesticides and over 1000 formulations used in India. The country also manufactures pesticides that are exported primarily to African countries, as well as to other neighboring countries.

As a result of a widespread advocacy movement over the span of two decades, in 2014 the Indian government agreed to review 66 pesticides used in the country, but banned abroad. However, it was only in 2018, when the first order came out which banned 11 and regulated the use of 7 pesticides. In 2020, the Ministry of Agriculture issued a new draft order intended to ban an additional 27 pesticides, which include several HHP[8].

This ban was initially proposed as a complete ban on manufacturing, distribution, commercialization and usage. But, alas the current proposal is less strict due to pressure from corporations. It now only includes a ban on distribution and usage, but the pesticides can still be manufactured in India and exported to other countries. Two other obstacles for a real transition are the informal markets that continue to buy and sell the banned pesticides and the existing stocks still allowed to be used.

A general concern of PAN India is that the sub-national authorities are not powerful enough to truly address policy. Decision-making about agriculture is becoming increasingly centralized, and a serious shortcoming in India's current regulatory regime is that it is exceedingly difficult for state governments (and district administrations) to ban pesticides.

PAN India's foremost objective is to amend the "Insecticides Act" that has regulated pesticides in India since 1968. Their goals are as follows: decentralize power so that states can ban pesticides, enforce liability on companies both for poisonings and suicides; and regulate pesticides through pricing which includes all externalities, meaning that the price of pesticides would increase, and especially low-quality, high-hazard pesticides would be more expensive than others.

KERALA ORGANIC FARMING POLICY: A CRITICAL VIEW

The state of Kerala has a policy on organic farming and represents one of the most progressive Indian states in this regard (PAN India, interview, 2020). The "Organic Farming Policy, Strategy and Action Plan" from 2008 is guided by the concept of a gradual conversion of the state to completely organic farming within ten years.

[7] Based on an interview with Narashima Reddy Donthi, PAN India, 2020

[8] https://pan-india.org/indian-government-urged-to-push-through-with-total-ban-of-27-pesticides

To reach this goal, the plan includes 24 strategies: one of them is the "Phase-out of Chemical Pesticides and Fertilizers from the farming sector". This strategy includes action to undertake necessary legislation to stop the sale and use of most hazardous pesticides, to implement a prescription-based system, and to declare ecologically sensitive areas chemical pesticide and fertilizer-free zones, among others.

The formulation of the policy was based on the Agricultural Ministry and the Kerala State Biodiversity Board's broad consultation with the public (Thanal, interview, 2020). As the policy has been implemented, NGOs and farmer groups have been recognized for playing a pivotal role in understanding and catering to the needs of organic farmers, especially in providing organic farming inputs and marketing support (Shinogi, 2011)[9].

The restrictions on pesticide usage have been regulated by an order issued in 2011 (Thanal, interview, 2020). Only national authorities can ban products, but this policy restricts the use of HHP and includes a phase-out of chemical pesticides and fertilizers, which was interpreted as a ban. Furthermore, it made it possible to restrict the license for the sale of pesticides at the state level.

The 10-year target of the policy to create a completely organic state has not been achieved. However, overall pesticide usage is decreasing, while domestic food production is growing. Nevertheless, there are some areas where pesticide usage is growing, especially in regions where plantations for export are cultivated. And, although the total amount of pesticides is decreasing, the sale of herbicides is growing. The reasons are, among others, labor shortages and climate change (Thanal, interview, 2020).

According to Shinogi (2011), the most crucial constraints to organic farming are: a lack of a reliable manual on organic farming practices, non-availability of organic farming inputs, producers' lack of awareness on grading and food quality, expensive and lengthy organic certification process, loss of yield in the first two years, and long waiting periods for the ecosystem to recover and respond positively.

Lessons learned by the NGO Thanal in Kerala include that grassroots capacity building among farmers is key to facilitate the transition to organic farming, and that consumer awareness plays a crucial role in allowing organic products to be sold at higher prices and the market favoring this transition (Thanal, interview, 2020).

SIKKIM – A BLUEPRINT FOR TRANSITION OR MARKET-ORIENTED TOP-DOWN APPROACH?

The Indian Himalayan state of Sikkim is a role model for the organic farming transition. It is a result of a state-led transition that started with a resolution in the state assembly in 2003 to convert all agricultural land to organic farming. The resolution was followed by different policies aimed at phasing out and consequently banning all synthetic pesticides and fertilizers.

[9] Shinogi, K. C. (2011). Organic Farming in Kerala: An Assessment of Adoption, Sustainability and Constraints. Unpublished M. Sc. Thesis. Indian Agricultural Research Institute

It all began with an initial concept policy in 2004. The policy mandated that subsidies for chemical fertilizers and pesticides be reduced by 10 % every year, that all sale points be closed, and the competent authorities were requested not to issue trade licenses or allow the transportation of fertilizers and pesticides from outside the state. At the same time, the policy was designed to encourage organic agriculture through the provision of organic inputs and training, as well as infrastructure, among other measures.[10] To implement all the programs and policies of organic farming and to convert the entire state into an organic state, Sikkim Organic Mission was launched as the executive body in 2010.

Chemical fertilizers and pesticides were banned completely in 2014. Their sale and use were made punishable by law, including imprisonment and a fine (Das & Bhattacharyya, 2018[11].

Later, the transition was guided by the State Policy on Organic Farming. A long certification process culminated in January 2016 with the declaration of all agricultural land as organic. To contextualize this achievement, it is important to bear in mind that the transition began in 2003, when chemical fertilizer use was already minimal in comparison to the national average, and that 80 % of the farmers in this region are traditional farmers who use a variety of agroecological techniques (Meek & Anderson, 2019)[12].

Sikkim has been recognized with the Future Policy Award in 2018, which is co-sponsored by FAO and IFOAM and the World Future Council, and has been celebrated as the "best agroecological policy".

Nevertheless, this experience has also shown to have clear shortcomings. The market orientation of the transformation has been detrimental for existing agroecological practices in Sikkim, as it favored certified organic agriculture. This dichotomy has resulted in a decrease of agrobiodiversity ("organic monocultures"), greater vulnerability to pests, restructuring of landscapes and social fabric, a hierarchical model of knowledge transference, and less food security and sovereignty (Meek & Anderson, 2019).

An inquiry into the challenges facing organic farming in Sikkim, published in 2018 by Das & Bhattacharyya, identified additional problems, such as a decline in the quantity of produce; lack of or inefficient inputs; lack of proper marketing initiatives, which results in the inability to obtain a good price for organic products on the market; lack of distribution channels and therefore, dependence of middlemen. Furthermore, importing conventional produce from neighboring states leads to lower prices for organic products[13]. Overall, these factors have resulted in a loss in the market share of organic produce and pose a threat to traditional markets.

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[10] For further information, consult the history section in the State Policy on Organic Farming: http://scstsenvis.nic.in/WriteReadData/links/Sikkim%20Organic%20Policy%202015-401740061.pdf

[11] Das, J., & Bhattacharyya, D. (2018). An Enquiry into the Challenges of Organic Farming in Sikkim. Business Studies--Volume--XXXIX, No. 1 & 2, January & July, 2018 (105- 113). Available at https://www.caluniv.ac.in/dj/BS-Journal/v-39/An-Enquiry.pdf

[12] Meek, D. & Anderson, C.R. (2019). Scale and the Politics of the Organic Transition in Sikkim, India. Agroecology and Sustainable Food System

[13] https://indianexpress.com/article/india/for-sikkim-farmers-organic-farming-is-gradually-becoming-a-bitter fruit-4880476/

It is important to note that of the all steps taken by the Sikkim government to become an organic farming state, the most significant effort was devoted to getting all of its agricultural land certified as organic. This feat involved massive spending on expensive third-party land certification for export crops, which in turn impeded the government from allocating more of its budget to other activities, such as training for farmers or providing organic pest control and manures (Das & Bhattacharyya, 2018).

2. BRAZIL: CONVERGENCE OF SOCIAL MOVEMENTS[14]

The Brazilian experience showcases organized social movements and collaboration among supportive national and local authorities at the center of bottom-up initiatives. The Permanent Campaign Against Pesticides and For Life ("Campanha Permanente Contra os Agrotóxicos e Pela Vida" in Portuguese), founded in 2011, is a convergence of environmentalists, peasants, urban workers, students, and consumers, among others, all fighting for a new model of agricultural development based on agroecology[15].

The flagship state law Nº 16.820 in Ceará, approved in 2019, is the first of its kind to halt aerial spraying at the state level (148.826 km^2), enacting a fine of 15,000.00 Brazilian Reais in case of breach. This law is the fruit of the labor of a broad alliance including communities such as residents of "Chapada do Apodi"[16]; the Federation of Rural Workers, Farmers, and Family Farmers of the state of Ceará (FETRAECE); members of academia; and progressive councilor Renato Rosendo who works closely with the Landless Workers' Movement (MST).

The National Union of Agricultural Aviation Companies (SINDAG), the National Confederation of Agriculture and Livestock (CNA), and the Brazilian Association of soybean producers (APROSOJA) filed an action of unconstitutionality against the law in Ceará arguing that the local government lacks the competence to legislate on national matters such as fumigations. However, environmental matters fall within the jurisdiction of local governments. This proceeding reached the Brazilian Supreme Court (STF); a final decision is still pending[17].

The Campaign has developed a blueprint for bills that has been used at the municipal level in places such as Florianópolis and Cascavel. Law 10.628 declared the municipality of Florianópolis a pesticide-free zone across agricultural, livestock, extractives production, and natural resource management in October 2019. This law bans the use and storage of pesticides, under any type of mechanism or technical application in any area that belongs to the island of Florianópolis. At the same time, it aims to develop

[14] Based on interviews with Naiara Bittencourt and Jacqueline Furquim (Campaign), Renato Roseno (Councillor in Ceara) and Valeria Burity (FIAN Brazil), 2020.

[15] https://contraosagrotoxicos.org/campanha-permanente-contra-os-agrotoxicos-e-pela-vida/

[16] In 1989, the National Department of Works Against Drought ("DNOCS" by its acronym in Portuguese) implemented an irrigation project on the Ceará side of "Chapada do Apodi", which allowed the installation of five large fruit companies. In addition to the concentration of land, the large-scale use of pesticides contaminated irrigati on channels in cities such as Limoeiro do Norte, Limoeiro do Norte, Quixeré and Russas, located in the irrigated perimeter, and the incidence of cancer is 38% higher than in other municipalities of a similar size.

[17] For updated information on the procedure (ADI 6137) please go to http://portal.stf.jus.br/processos/detalhe.asp?incidente=5696730

organic, sustainable, and agroecological-based rural production. The law also creates tax incentives for rural producers to transition to organic or agro-ecological production. However, the law still needs regulation to be fully implemented. In Cascavel, Paraná, law N° 6484 of 2015 banned using and applying any type of pesticide in rural areas within the minimum distance of 300m around schools, hospitals, and residential pockets. This distance is shortened to 50m when property owners establish a green buffer zone between their property and such establishments.

At the national level, there are currently two contradictory pending bills at the National Congress of Brazil: bill 6.670/2016 creates the National Policy for Agrotoxic Reduction (Portuguese acronym: PNARA) and proposes concrete actions throughout the pesticide chain; and bill 6.299/2002 known as the "poison package".

The creation of PNARA was inspired by and grew from a suggestion by the National Policy on Agroecology and Organic Production (Portuguese acronym: PNAPO), a policy created in 2012 through a civil-society participatory process wherein women played a crucial role, especially the Movement of Peasant Women (MMC). This policy includes guidelines to achieve sustainable and fair production systems in terms of people and the environment. Even though the PNARA has some shortcomings, such as a lack of a ban on aerial spraying and periodical assessments every 15 instead of every 5 years, the campaign still supports it because it will help to reduce the use of pesticides. However, PNAPO was wiped out in 2019 as the Bolsonaro government terminated its executive and deliberative councils, along with all other councils with social representation. The "poison package", on the other hand, consists of several bills, authored by the rural caucus (large landholders and their representatives) who seek to weaken the Pesticides Law (7.802/1989) and allow more pesticides to be registered at a faster pace.

The National School Feeding Program (PNAE) and the Program for Food Acquisition (PAA) are examples of agroecological policies and practices in Brazil. The National School Feeding Program includes state procurement of agroecological production and small-scale producers: at least 30% of food served must come from family farming at the national level and distributed by social organizations. The Program for Food Acquisition also benefits family farming, as it buys small-scale farmers' production (from individuals or through farmers' associations) and then donates its purchases to social organizations: women, organic producers, and traditional communities have priority in state procurement. Both programs are still running despite the current political situation in Brazil, which includes budget cuts, legislative initiatives against PNAE[18]. The USA and Canada also called these programs into question before the WTO, because of their alleged relationship to state subsidies.

The experience of the agroecology network ECOVIDA[19], showcases horizontal, decentralized, and participatory certification recognized by the state, which uses legal frameworks based on participatory certification. Through this network, food-producing families certify other families by considering not only technical criteria, but also social factors, such as the elimination of violence against women.

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[18] Bills 3.292/2020 and 4.195/2012. For more information on both bills in Portuguese, please see https://alimentacaosaudavel.org.br/defenda-o-pnae/?fbclid=IwAR1IsTzSML5vc5OOFVZMSbVrHoDwGPKhkuy4j5_Yg-GXwdbQt38Wvw_mcCg

[19] http://ecovida.org.br/

3. ARGENTINA: SOCIAL MOVEMENTS SUPPORTING THE TRANSITION TOWARDS AGROECOLOGY[20]

Argentina, as is also the case of Brazil and Paraguay, continues to be used as a laboratory to test new policies that support the industrial agricultural model, such as Agriculture 4.0 from the Bill Gates foundation[21]. Some sectors of the national government work closely with the agribusiness sector and have reduced import duties on pesticides amid the pandemic in 2020. Meanwhile, litigation, bylaws, and productive support for agroecology have been utilized to promote a transition towards a pesticide-free system. People have even used their bodies to challenge tractors and planes used for fumigations in places where the nation-state is not present.

There use of the writ of amparo is growing, which establishes a minimum distance around schools and neighborhoods. However, favorable judicial decisions are plagued by a lack of implementation, and the use of rights-based arguments to challenge them, for example the case of a judicial decision protecting 1,000 schools in Entre Rios, which agribusiness challenged on the grounds of the right to work and produce.

The experiences at the municipal level show that the implementation of progressive bylaws largely depends on the mobilization of organized social movements and neighborhood associations, among others. For example, in Entre Ríos, the local government has limited fumigations and promotes agroecology through the Plan for Healthy, Safe and Sovereign Food[22] in Guayminí and in Gualeguaychú which includes technical and commercial support, as well as fiscal and commercial incentives such as state procurement of production. In 2020, the Ministry of Agriculture, Livestock, and Fisheries created the the National Directorate for Agroecology, which will design a Strategic Plan for a Productive Transition aimed at promoting agroecology[23].

This transition to agroecology is not limited to small-scale producers, family farmers, and horticultural producers in urban areas. All social movements – including the Land Workers Union (UTT) and the organizations affiliated with the Latin American Coordination of Peasants Organizations CLOC/La Via Campesina – have agroecology programs in place to a certain degree. These programs provide capacity building as well as sustained support, given that there is often an initial decline in production.

The following country snapshots only portray specific issues that we consider relevant to transition experiences. They do not represent an overall description of the transitional context, as in the examples above.

[20] Text based on interviews with Javier Souza Casadinho (Rapal) and with the journalist Darío Aranda, 2020

[21] For more information on Agriculture 4.0, please see https://docs.gatesfoundation.org/Documents/GatesAgOne_OverviewandFAQ.pdf. For criticism of Agriculture 4.0, please see Cabaleiro, F. (2020) El socio menos pensado: Bill Gates desembarca en el sistema agroalimentario. Only available in Spanish.

[22] Spanish: Plan de Alimentación Sana, Segura y Soberana

[23] Administrative Decision 1441/2020, see https://www.revistainternos.com.ar/2020/08/se-oficializo-la-creacion-de-la-direccion-nacional-de-agroecologia/ (Only available in Spanish)

4. FRANCE:
PIONEERING LEGISLATION IN THE REGULATION OF PESTICIDE EXPORTATION

The so-called EGalim law was adopted in October 2018 by the national assembly. Its special significance for the regulation of pesticides is addressed in Article 83, which stipulates that the production, storage, and transport of plant protection products that contain active substances that have not been approved for reasons related to the protection of human or animal health or the environment are prohibited as of 1 January 2022.

After the adoption of this law, the French lobbying association for agricultural chemistry (UIPP) – which includes Bayer, Syngenta, BASF, and all crop protection product manufacturers located in France, and the French Seeds Union (UFS), sued against it in December 2019. The appeal challenged Article 83 of the law arguing that "the prohibition of export, put in place by these provisions, of certain plant protection products containing active substances that are not approved by the European Union, due to the seriousness of the consequences for the producing or exporting companies, would be contrary to the right of free enterprise". In UIPP's view,"such a prohibition would not be related to the environmental and health protection objective in that the importing countries that allow these products will not discontinue using them, as they can purchase them from the foreign-based competitors of the companies based in France".[24]

Yet, the Constitutional Council decided in January 2020 that the disputed provisions of the law are in compliance with the French Constitution; thus, the law shall go into effect in 2022[25]. In its press release[26], the Constitutional Council considers that the legislature is intended to prevent companies established in France from participating in the sale of banned pesticides throughout the world and thus, indirectly, from causing harm to human health and the environment. In doing so, and even though the production and marketing of such products might be authorized outside the European Union, the infringement upon the freedom to undertake is well in line with the constitutionally valid objectives of protecting health and the environment.

It is important to note that although the provision of Article 83 is an important step in rolling back double standards and advancing in the regulation of the global pesticide trade, 21 member organizations of the Citizens' Platform for Agriculture and Food Transition have published a strong critique[27] of the law as a whole. They take issue with its meager ambition and efficiency, the lack of a clear strategy on how to reduce dependency on synthetic pesticides; and therefore argue that it will not improve the situation of farmers' income, nor boost the organic transition.

[24] https://www.conseil-constitutionnel.fr/en/decision/2020/2019823QPC.htm

[25] ibid

[26] https://www.conseil-constitutionnel.fr/actualites/communique/decision-n-2019-823-qpc-du-31-janvier-2020-communique-de-presse

[27] https://www.generations-futures.fr/wp-content/uploads/2019/10/decryptage-loi-egalim.pdf

5. SPAIN:
PROMOTING AGROECOLOGY THROUGH PUBLIC PROCUREMENT PROGRAMS WITH A FOOD POLICY COUNCIL IN VALENCIA AND REGULATORY ADVANCES AT THE REGIONAL LEVEL[28]

Changes in favor of agroecology must involve changes in social relationships as well. One important aspect in this regard is fostering participation in decision making about food systems, which is exemplified by food policy councils.

The Food Policy Council of Valencia is a consultative and sectoral participation body of the City Council designed to improve food governance in the municipality, approaching Valencia not only as a city, but as part of an entire bioregion. This was the first food policy council established in Spain and was initially promoted by a conglomeration of entities, mainly social groups and the Valencia City Council through the Department of Agriculture. This council was born out of the participative process „Walking towards a Food Policy Council", which was developed throughout 2016 and 2017, wherein social and economic actors in the region working for sustainable and healthy food and agriculture collaborated to define this new local food governance space.

After this participatory process, which lasted almost two years and involved the majority of actors from the local food system, including public administration, the private sector, academia, and civil society, the Municipal Food Policy Council of the City of Valencia[29] was officially established in 2018.

An iconic feature of the city of Valencia is its historic gardens[30], which are increasingly under threat as the city expands. In order to protect the gardens, the council's foremost goal is to strengthen local production, and secondly, promote organic production. Among other strategies, the council focuses on a) the promotion of short-distance distribution and marketing channels of agricultural produce, b) sustainable public food procurement by the municipality of Valencia, especially in school canteens, c) understanding and improving the situation of the most vulnerable groups through a special human rights working group, d) agroecological transition, e) local food governance[31].

Lessons learned from this council's experiences include that a transition to agroecology can be accelerated by promoting demand through public procurement and that establishing a participatory guarantee certification system for organic production lowers the hurdle of costly certification procedures. Another lesson is that although the political discourse of a public administration may be in favor of food sovereignty, setting things into motion actually depends on a strong base of individuals dedicated to working from the ground up.

Additional regulatory initiatives at the regional level of the autonomous community of Valencia should be highlighted, as they overlap with the goals and aspirations of the

[28] Based on Interview with Lidia Garcia (Food Policy Council Valencia)

[29] More information can be found on the website: https://consellalimentari.org/es/que-es-el-calm/

[30] In Spanish: Huerta de Valencia

[31] https://consellalimentari.org/wp-content/uploads/2020/10/estrategia_alimentaria_municipal_cas-def-12_07-11.pdf

council. One of them is the "Garden Law"[32], which was adopted in 2018 after 20 years of social struggle. This law promotes agroecological production in the Valencia Garden by establishing a formal "Garden Council" at a regional level. Another initiative is the "Organic Production Plan"[33], which aims to reduce the use of pesticides; and a third one is the regulation on the promotion of healthy and sustainable food[34] which mandates higher percentages of organic produce for public procurement.

6. ITALY: ECOREGIONS AND LOCAL BYLAWS[35]

The experience of Central Italy shows the deployment of both productive projects and legal frameworks to transition out of hazelnut monocultures due to its devastating impact on bodies of water, landscape, biodiversity, and the social fabric[36].

On the production side, there are ecoregions such as the "Biodistretto della Via Amerina e delle Forre", which was established almost 10 years ago and encompasses 13 municipalities, and is designed to show that organic hazelnut production is possible (Spadano, 2018)[37]. Eleven organic farms in the ecoregion started a pilot project called "Community of hazelnuts"[38] through which they aim to show that a local supply chain from production to transformation and commercialization works far better for the farmers. The idea of an ecoregion is not limited to organic agriculture, but is also intrinsically linked to the historical, cultural, and social aspects of a region, and therefore also includes ecotourism as a productive model.

Regarding the regulatory framework, some municipalities have used bylaws to take control over regulations and implement a transition model that reduces the number of pesticide treatments and mandates buffer zones. Some common challenges to these regulations are that private owners and their associations often make appeals against the ordinances. Moreover, illegal activities such as spraying forbidden substances at night have also been observed. Appeals against these municipal ordinances are successful when procedural mistakes have been made[39].

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[32] Spanish: Ley de la Huerta: https://www.boe.es/buscar/pdf/2018/BOE-A-2018-5394-consolidado.pdf

[33] Spanish: Plan de Producción Ecológica: https://agroambient.gva.es/documents/163228750/163232590/I+PLA+VALENCI%C3%80%20DE+PRODUCCI%C3%93%20ECOL%C3%92GICA.pdf/96c71dcb-3b4a-4687-a039-81de15d1b6db

[34] Spanish: DECRETO 84/2018, de 15 de junio, del Consell, de fomento de una alimentación saludable y sostenible en centros de la Generalitat: https://dogv.gva.es/es/eli/es-vc/d/2018/06/15/84/

[35] The text is based on a study published by Manlio Masucci in 2020, in Terra Nuova 362 - 07/2020, and an interview with the author in 2020.

[36] According to ISTAT, 86725 ha of hazelnut monocultures were established in 2019, an increase of 13000 ha from 2015. Please read Masucci (2020) on the consequences of hazelnut monocultures for the sweets industry in Central Italy·

[37] Spadano, Chiara (2018). Filiera corta e biodiversa. Il futuro della nocciola. Altreconomia Numero 204. http://biodistrettoamerina.com/wp-content/uploads/2018/05/altreconomia_204-nocciole.pdf

[38] In Italian: Comunitá della nocciola

[39] This was the case, for instance, in the municipalities of Bolsena and Grotte di Castro whose ordinances were rejected, because they prohibited the establishment of new hazelnut plantation regardless of their cultivation methods. Thus, the ordinance was deemed to violate the constitutional right to economic activity. More information can be found in Masucci (2020).

Another widespread challenge is a completely legal practice that is being used by a significant portion of farmers: they participate in a program for transitioning to organic agriculture, which is funded by the EU and lasts for 5 years. Once the 5 years have passed and organic production should in theory begin, the farmers return to conventional agriculture practices. Thus, the EU funds only serve to grow these farmers' conventional production.

BYLAW IN MONTEFIASCONE: A BLUEPRINT FOR OTHER MUNICIPALITIES

However, there are also ordinances already in place that have not been appealed, as is the case in Montefiascone[40]. Ordinance N. 13 went into effect in May 2019 and covers not only the municipality, but to the whole catchment area of the Bolsena lake, located close to Montefiascone. The bylaw includes a general ban on glyphosate and a ban on the use of all chemical pesticides in areas under natural protection. Furthermore, it establishes minimum buffer zones for all other chemical pesticides and fertilizers around bodies of water used for human consumption; and it prohibits the use of the water supply from public fountains to mix plant protection products. Thus, this law creates a variety of conditions that make it difficult for hazelnut monocultures to follow conventional production practices.

The factors contributing to the success of this municipal ordinance are multiple: it applies already existing legislations (especially environmental laws at the national and at EU level); it does not infringe upon constitutional rights such as the freedom of private initiative; non-compliance results in severe penalties; both existing and new plantations are inspected; specific documentation is required with regards to impact on water; the community is involved in monitoring; it applies the general principle of "integrated crop protection" in order to reduce chemical inputs to a minimum; and it is based on scientific research and the involvement of different actors.

In order to create the ordinance, different actors, such as citizens' groups, farmers, social movements, and politicians came together. Now, more municipalities want to replicate this ordinance and aim to establish another broad ecoregion.

[40] You can read the ordinance (in Italian) here: http://www.comune.montefiascone.vt.it/zf/index.php/atti-amministrativi/ordinanze/dettaglio/atto/GTkRjN1EqST0-F

7. THE UNITED STATES: THE JUDICIARY AND ALTERNATIVE WAYS OF JUSTICE[41]

In 2007, Pesticide Action Network of North America (PANNA) filed a petition[42] seeking a ban on chlorpyrifos based on its serious health risks, particularly for children. The 2007 petition presented scientific evidence of children exposed to chlorpyrifos drift that the Environmental Protection Agency (EPA) ignored when it made its 2001 and 2006 regulatory decisions[43], even though it now acknowledges it had a legal obli-gation to address drift exposures. The 2007 petition also presented evidence of alarming neurodevelopmental impairments in children resulting from exposure to chlorpyrifos, which the EPA discounted in 2001 and 2006, and which has been further substantiated in the scientific literature[44] since that time. The EPA has conducted assessments and internal peer reviews and has made repeated promises to resolve the petition by deadlines that have long since passed, including the "concrete timeline" relied upon by the Court in denying the first mandamus petition. The EPA's failure to make a final decision on the 2007 petition puts children at risk of harm from chlorpyrifos exposure and leaves PANNA without legal remedies to challenge the EPA's ongoing failure to take the necessary steps to protect children.

Because the 2007 petition was not successful in getting the EPA to provide an answer on whether it would ban chlorpyrifos, another petition was filed in 2014 with the same Court. League of United Latin American Citizens, Pesticide Action Network North America (PANNA), and other organizations[45] petitioned the United States Court of Appeals for the 9th Circuit with the State of New York, and others[46], against Andrew Wheeler, acting administrator of the EPA and the EPA. In April 2019, the 9th Circuit Court of Appeals granted a writ of mandamus and ordered the EPA to decide by mid-July whether to ban chlorpyrifos.

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[41] Text based on the research prepared by Kadian Crawford and R. Denisse Córdova Montes (Human Rights Clinic at the University of Miami School of Law).

[42] https://www.nrdc.org/sites/default/files/hea_10072201a.pdf

[43] US EPA - Pesticides - Interim Reregistration Eligibility Decision (IRED) for Chlorpyrifos, 2006, https://www3.epa.gov/pesticides/chem_search/reg_actions/reregistration/ired_PC-059101_28-Sep-01.pdf.

[44] "Chlorpyrifos Facts." EPA website, https://www3.epa.gov/pesticides/chem_search/reg_actions/reregistration/fs_PC-059101_1-Feb-02.pdf, February 2002; Makris S, Raffaele K, Sette W, Seed J. A retrospective analysis of twelve developmental neurotoxicity studies submitted to the USEPA Office of Prevention, Pesticides, and Toxic Substances (OPPTS). Draft 11/12/98. Available at https://archive.epa.gov/scipoly/sap/meetings/web/pdf/neuro.pdf

[45] Natural Resources Defense Council, California Rural Legal Assistance Foundation, Farmworkers Association of Florida, Farmworker Justice, GreenLatinos, Labor Council for Latin American Advancement, Learning Disabilities Association of America, National Hispanic Medical Association, Pineros y Campesinos Unidos del Noroeste, and United Farm Workers

[46] The State of Maryland, the State of Vermont, the State of Washington, the Commonwealth of Massachusetts, the District of Columbia, the State of California, and the State of Hawaii

In 2019, the same court ordered the EPA to finalize its proposed ban on chlorpyrifos based on undisputed findings that the pesticide is unsafe for public health and particularly harmful to children and farmworkers, but the EPA asked and received a rehearing. In March 2019, advocates represented by Earthjustice argued again in court that chlorpyrifos has no place near fruits or vegetables.[47]

As an alternative to seeking justice in the for the above ongoing lawsuit, the same organizations involved in this lawsuit, as well as other international organizations, went before the Permanent Peoples Tribunal (PPT) at the same time. Due to the fact that it has been impossible for victims and survivors to have effective recourse to legal avenues for justice, compensation, and remediation, a trial on transnational agrochemical corporations took place in Bangalore, India, in 2011, after two years of intense work gathering and documenting cases. The tribunal found that the "Big 6" pesticide corporations: Bayer, BASF, Dow Chemical, DuPont, Monsanto, and Syngenta were guilty of human rights violations in their unregulated use of pesticides in their home countries and in host countries.

The PPT declared that the USA, the Swiss Confederation and the Federal Republic of Germany had demonstrably failed to comply with their internationally accepted responsibility to promote and protect human rights, especially those of vulnerable populations and their specific customary and treaty obligations in the realm of environmental protection in the following ways: The three states, where the six corporations are registered and headquartered, have failed to adequately regulate, monitor, and discipline these entities by national laws and policy. The concerned states have not fully respected the human rights of freedom of speech, expression, and association of citizens and persons within their own jurisdictions that are protesting against the move toward a second Green Revolution, evidently not having learned the lessons of the first. These states have unjustifiably promoted a double standard approach: prohibiting the production of hazardous chemicals at home, while allowing their own TNCs unfettered use in other countries, especially in the Global South. Therefore, these states need to exhibit a more consistent response to address the imperatives of global justice, which they otherwise so effusively claim to promote.

[47] In May 2021, San Francisco's 9th District Court ordered the EPA to follow its own science and get chlorpyrifos off the market for good. EPA has a small window to request a rehearing by the court, but PAN's lawyers are hopeful they will not. The agency will then have 60 days to revoke all uses of chlorpyrifos that they cannot determine to be safe. With just a few more steps in the legal process, a national ban is close to the finish line — and farmworkers, children, and rural families will no longer be exposed to this dangerous, brain-harming chemical. For more information please read Earthjustice press release.

III. PEOPLE' S IMAGINATION AND STRUGGLES: A PATH FORWARD GROUNDED IN HUMAN RIGHTS

The experiences described in the country snapshots show how social movements and organizations have been using institutional and extra-institutional avenues to transition towards pesticide-free food systems. Organization and mobilization is at the heart of these bottom-up initiatives employing both kinds of avenues. Initiatives applying institutional avenues include strategic litigation, and regulatory and policy processes. Communities and organizations use strategic litigation before criminal, civil, constitutional, administrative and environmental fora.

Extra-institutional avenues include, for example, communities who use their bodies as a form of self-defense to face off against tractors and airplanes in order to prevent fumigations backed by favorable judicial decisions or bylaw. Meanwhile, in places where local governments have no coercive power to enforce bylaws, their implementation is even more dependent on people organizing.

1. IMAGINATION: APPROACHES TO THE TRANSITION

When analyzing people‘s initiatives for transitioning to pesticide-free food systems, we can observe different entry points and classify at least six approaches:

Territorial approaches refer to regulations of a zonal nature. Their content can vary from the restriction of specific pesticides to pesticide-free and agro-ecological zones. The examples presented in this study are Florianópolis (Brazil), ecoregions in Central Italy, and Sikkim (India). A very positive aspect of these territorial approaches seems to be that they can easily expand if neighboring municipalities adopt similar regulations, such as in the case of ecoregions in Central Italy.

Another approach consists of bans on specific pesticides or active ingredients. Examples covered in this study are the proposed national law to ban 27 HHP in India, the successful ban of endosulfan in Kerala and later in India as a whole, and the ongoing attempts to ban chlorpyrifos in the USA. The lessons herein are that a truly comprehensive ban needs to cover manufacturing, usage, distribution, and commercialization. In order

to ensure enforcement, an active civil society and the awareness of politicians are key. Other approaches involve regulating pesticide registration, distribution, and commercialization. This approach can be similar to a ban but adds the dimension of addressing double standards explicitly. The experience of France is significant because the country has recognized its extraterritorial state obligations to protect people abroad from human rights violations. The Constitutional Council ordered that the infringement of the freedom of enterprises is justified based on the constitutionally valid objectives of protecting health and the environment; thereby prioritizing human rights and environmental law.

Communities also strive for regulations regarding pesticide usage to protect nearby communities and workers and their families from acute negative impacts. Examples presented in this study are the establishment of minimum-distance buffer zones in Cascavel (Brazil), and Montefiascone (Italy), and the prohibition of air spraying in Ceara, Brazil. In some cases, these measures can result in a reduction of pesticide usage if, for instance, minimum distances are difficult to meet and make the use of a pesticide impossible.

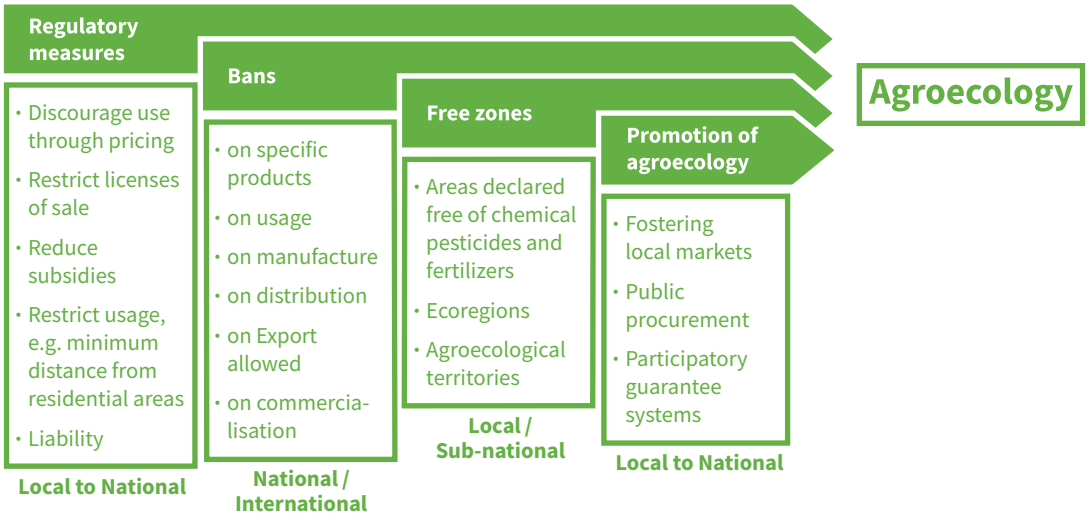
Finally, another approach is the promotion of agroecology or organic agriculture. Examples in this study include, among others, the experiences in Gualeguaychú and Guayminí (Argentina), PNARA (Brazil), Kerala (India), and Valencia (Spain). There are a variety of ways to promote changes in that direction and this study is not meant to give an overview of public policy mechanisms for fostering agroecology, which the literature[48] deals with extensively. The experiences analyzed in this study however emphasize some aspects that we do wish to acknowledge here:

Firstly, we should highlight the importance of fostering demand through public procurement programs and training in agroecological methods through the horizontal sharing of experiences. Especially during the transition period, there is a need for support, but programs must also be ongoing to ensure a real, lasting transition. Monetary support can be enacted through tax incentives, such as in Florianópolis, Brazil. Marketing opportunities for organic products play a key role. Local markets that provide fair prices for organic products, functioning distribution channels with adequate infrastructure and without the need to rely on intermediaries, as well as certification, are all crucial. Participatory guarantee systems are important to curtail costly certification processes, strengthen ties between producers and consumers, and accelerate certification. Consumer awareness also has a leading role and can enhance or even initiate the transition.

The above categorization of the different approaches is of course artificial, given that many initiatives utilize several different measures in conjunction (for instance, efforts to ban a pesticide and foster agroecology, or establish minimum distances), in different ways, and their effectiveness varies depending on the local context and the force of social demands.

[48] See for instance: Declaration of the international forum for agroecology (Nyeleni, 2015); FAO 10 elements of agroecology; FAO's AgroecologyLex, a continually updated online database of legal frameworks, policies, and programs related to agroecology in different national contexts; HLPE 2019 report on agroecological and other innovative approaches; Anderson & Anderson.resources to inspire a transformative agroecology: a curated guide.

Nevertheless, we get the sense that in general, those measures differ in scope and in scale. Pesticide-free zones are rather local or subnational, whereas bans tend to fall under national authority. Furthermore, pesticide-free or agroecological zones are generally far more ambitious (a more significant step towards pesticide-free food systems) than regulating application methods. We therefore propose the following classification of the different approaches:



2. STRUGGLES: STUMBLING BLOCKS ON THE PATH TOWARDS TRANSITION

A general challenge to measures, rulings, and laws aiming to ban or regulate pesticides are complaints by large-scale producers and agribusiness alleging, for instance, freedom of enterprise, the right to work and to produce under civil or commercial law, or procedural mistakes as arguments to challenge regulations that are in line with the international human rights obligations of states. Some complaints illustrate a power imbalance, for example, when a small and local initiative is challenged by groups close to national agribusiness before the highest national court. Those complaints contradict the primacy of human rights under Art. 103 of the UN Charter interpreted in connection with its preamble, and Articles 1 and 55. In fact, freedom of enterprise is not an absolute right. It cannot subordinate human rights or fundamental rights, as they are recognized as priority in international law and in a number of national constitutions. This is reaffirmed in the decision of the French Council mentioned above.

Furthermore, as communities attempt to defend themselves against the impacts of pesticides by filing claims against damage incurred by pesticides, they often come up against the challenge of not being able to prove the causality between the production, commercialization, and application of pesticides and the effects suffered by their bodies, food, and ecosystems. This dilemma has its origin in at least two facts:

Firstly, in many countries, tort law or extra contractual civil law require proof of the causal relationship between the use of the pesticides and the alleged damage in order for liability to be adjudicated to the perpetrators. Proving causality is extremely complicated for local communities, since they usually lack the scientific means to collect the required evidence. Moreover, very often the procedural regulations do not recognize community testimonies and conclusions on the relationship between the use of pesticides and the harm they are suffering as valid evidence for adjudication of

cases. At the same time, adjudicating bodies easily accept as valid evidence scientific information submitted by companies producing or commercializing pesticides – who often work closely with perpetrating companies. There is a pattern of what we would like to call colonial validation and interpretation of evidence accompanied by an undermining or neglect of people's knowledge.

Secondly, in traditional legal systems, procedural laws attribute the burden of proof of such causality and of the liability of the involved perpetrators to the plaintiffs (affected communities). These are both extremely difficult for communities to prove, since they are fighting for survival and are frequently opposed to powerful counter-parties defended by extremely well-equipped legal teams.

Another challenge is found in conflicts between local and national jurisdictions, which can impede or hinder the implementation of locally agreed measures. Complaints arguing that local governments lack the jurisdiction to regulate pesticides, and the difficulties local governments experience to ban pesticides demonstrate that local authorities have mandates to regulate or restrict pesticide use, but not to ban them, which is a competence allocated to national authorities. This provides a strong rationale for adopting international agreements to ban pesticides to avoid export and import, thereby generating a level playing field that would solve jurisdiction conflicts between local and national decision-makers.

Another hurdle for effective pesticide bans are fragmented bans, which when applied only to distribution and usage, but not to manufacture and commercialization, can pass the problem on to other territories, while also creating double standards. Furthermore, commercialization of banned pesticides through informal economies and the large amount of pesticide stocks that are generally still allowed to be used pose additional complications.

Finally, another pitfall along the path towards transition is the use of trade regulations to oppose bans or restrictions, which place the authorities willing to protect their populations' human rights from pesticides at risk of sanctions when implementing their human rights obligations.

With regard to free zones, as acknowledged above, their scope can vary significantly. Furthermore, as the experience of Sikkim shows, a pesticide-free and even

certified organic territory does not imply, per se, an agroecological transition. In fact, so-called "organic monocultures" constitute a denaturalization of agroecology. Since this model produces food for export and does not contribute to the enjoyment of the right to food of local communities, it actually undermines food sovereignty, leads to a loss of biodiversity, and fails to contribute to dismantling power structures, for which peasant agroecology has long advocated. It therefore becomes clear that any attempt to create pesticide-free territories must happen within the framework of food sovereignty.

Regarding support for organic agriculture or agroecology, challenges identified in the experiences documented herein include, among others, the length of the recovery time needed by land exposed to pesticides, lack of inputs, lack of proper marketing opportunities and distribution channels, and all aspects which can discourage the movement toward agroecology and generate a rollback. Regression is at its worst when transition programs and initiatives are unfounded or insufficiently supported in the middle or long term.

An overarching challenge is corporate interference or capture of institutions authorized to regulate pesticides manufacturers, dealers, and users, by agri-food businesses. The increasing power of oligopolies managing pesticides and other toxic substances impedes real transition, even in cases in which some authorities understand how these corporations can impair and nullify the realization of human rights and genuinely wish to advance measures towards pesticide-free food systems.

3. A PATH FORWARD GROUNDED IN HUMAN RIGHTS: IMPLEMENTATION OF THE INTERNATIONAL COVENANTS AS DETAILED BY »UNDROP«

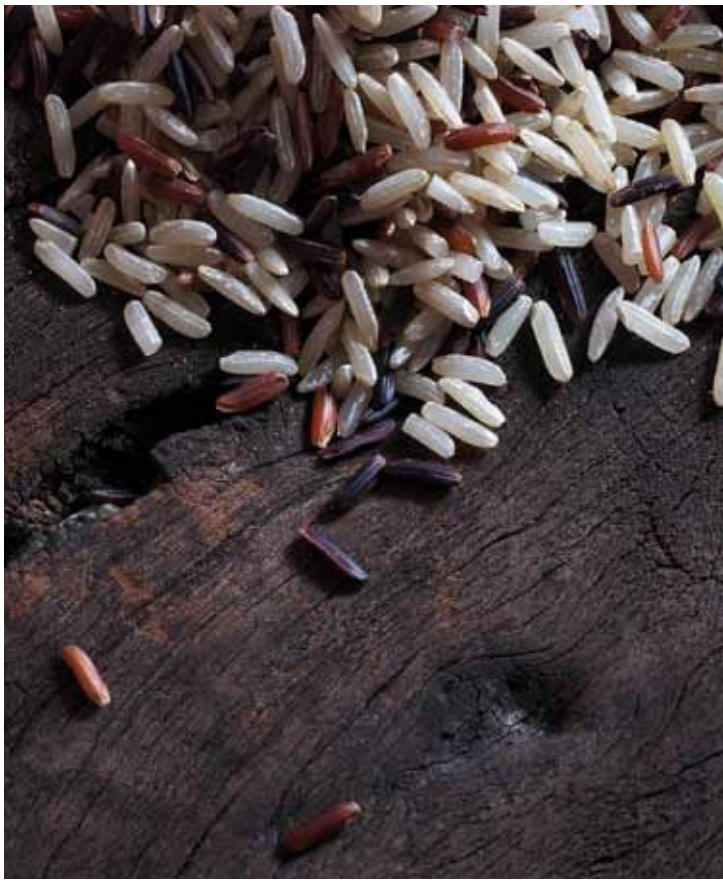
The challenges faced in the analyzed cases show that states are frequently in breach of their obligations to respect, protect, and fulfill peasant's rights. States' obligation regarding small-scale food producers derive from the international human rights covenants (ICESCR, ICCPR), and have been detailed for the specific case of peasants and other people working in rural areas in the »UNDROP«. »UNDROP« recognizes general obligations to respect, protect, and fulfill (»UNDROP«, Art.2). Furthermore, it recognizes states' obligations to protect, respect, and fulfill specific peasants' rights violated by pesticide manufacturing, trade, and use, including the rights to a healthy environment (»UNDROP«, Art. 18), not to be exposed to hazardous substances and toxic chemicals (»UNDROP«, Art. 14.2), to healthy work conditions (»UNDROP«, Art. 14), adequate food (CESC, GC 12, Art. 11; »UNDROP«, Art. 15), clean water (CESCR, GC 15; »UNDROP«, Art. 21), and the right to health (ICESCR, Art. 12; »UNDROP«, Art. 23).

On the contrary, if states are truly committed to the protection and fulfillment of peasants' rights, in »UNDROP« they have a clear legal basis for adopting laws designed to ban the manufacturing, commercialization, and use of pesticides: by establishing pesticide-free zones and regulating the use and commercialization of pesticides (Art. 14.4). The obligation to protect also means that administrative and judicial authorities shall give priority to peasants' human rights when deciding complaints filed to challenge protective regulations, for instance to defend the freedom of enterprise or apply trade and commercial laws (»UNDROP«, Art. 2.4, 2.5 and 12). Also in accordance with their obligation to protect, states should eliminate double standards. Home states of

pesticide producers should ban the export of HHP and recipient countries should prohibit their import.

According to UNDROP, states shall give priority to laws protecting peasants' rights over laws favoring corporations and other non-state actors dealing with pesticides and thus nullifying or impairing the realization of peasants' rights (»UNDROP«, Art. 2.5 and 18.5).

In addition, states shall ensure access to justice[49], prevention, and redress mechanisms in cases of abuse by pesticides manufacturers, traders, and users (»UNDROP«, Art. 12). On this basis, in order to overcome legal conditions hindering communities' access to justice and to effective remedy, including those related to the burden of proof, lawmakers should take two kinds of measures to correct the so-called "inequality of arms" in pesticide-related judicial processes. On the one hand, they should recognize the strict liability in cases of damages to human rights caused by toxic pesticides. This means that the mere occurrence of harm would create a presumption of liability of the perpetrators, which would only be excluded due to fortuitous events or force majeure. Similar rules exist in some legal systems, for example concerning car accidents or other risky activities. On the other hand, judicial procedure regulations should allocate the burden of proof to the powerful perpetrators and not to the affected communities struggling for survival. To this end, the law would establish a rebuttable presumption of liability on the manufacturers, traders, and users of toxic pesticides. Consequently, in a judicial process, they would have the duty to prove that the pesticides were not the cause of the damage, and therefore exclude their liability; or if combined with strict liability, they would have to prove the fortuitous events or force majeure.



Strict liability for damages derived from the use of toxic pesticides can be justified by the hazardous or risky nature of the toxic pesticides and the difficulty in proving the causality. Furthermore, both measures would be justified by the state's existing obligations to guarantee access to justice and remedy for the communities affected by human rights violations and to ensure equality of arms for the affected communities in circumstances of power imbalances.

In line with »UNDROP«, states shall also adequately promote the transition to agroecology (»UNDROP«, Art. 15.5, 16.4, 17.7 and20) which facilities long-term solutions to fulfill peasants' rights (»UNDROP«, Art. 2.1) and impedes retrogression (ICESCR, Art. 2.1). Other relevant factors for ensuring effective regulation to complete the transition are distributing competences for banning pesticides, deciding on policies to support the transition to pesticide-free food systems, and regulating the use of pesticides. Taking into account that the initiatives most relevant to advancing a transition

emerge from local communities, states should empower local authorities with the needed competences to support and advance bans on pesticide importing, manufacturing, commercialization, and use. Furthermore, local authorities should be competent to adopt regulations, policies, and strategies to regulate the use of pesticides and to define strategies for transition towards pesticide-free communities and food systems. What's more, they should be authorized to define short, middle and long-term measures to support agroecology. This would include, for example, support for agroecological production, knowledge exchanges between small-scale food producers and organizations, participatory self-certification systems, exclusion of imposed foreign certification systems, marketing and advertising rules that indicate when food contains pesticides, as well as other incentives needed to ensure access to markets or exchange systems for peasants and other rural communities producing organically or in other equally sustainable peasant-production formats.

Likewise, certification processes should not exclude peasants and other small food producers from the markets and should be participatory. Organizations of peasants and other people working in rural areas should have the right to participate in certification systems (»UNDROP«, Art. 11.3). In addition, states should adopt measures to ensure that peasants using agroecological production practices have full and equitable access and participation in markets to sell their products at prices that allow them and their families to maintain an adequate standard of living (»UNDROP«, Art.16.3; ICESCR, Art. 11).

States should adopt all measures necessary to avoid corporate interference in pesticide-related governance and regulatory processes, which impair or nullify the enjoyment of the rights of peasants and other people working in rural areas, including their right to food sovereignty (»UNDROP«, Art. 2.5 and 15.4).

Last but not least, states shall respect the way in which people on the ground are organizing and expressing their opinions (ICCPR, Art. 19 and 22; »UNDROP«, Art. 8.1, 8.2 and 9) to advance initiatives towards pesticide-free food systems and communities. This includes their right to participate in policy formulation and in governance and regulatory processes (ICCPR, Art. 25; »UNDROP« Art. 4.2a, 10 and 15.4).

IV. CONCLUSION

The international covenants, detailed in the UNDROP, give states clear guidance on how to support the solutions that people on the ground are applying in the fight for pesticide-free food systems. However, the challenges identified undeniably demonstrate that states are not effectively implementing the rights recognized in the »UNDROP«.

The experiences with legal and policy processes illustrate the importance of bottom-up social transformative processes with organized social movements in broader convergences with other groups, such as environmentalists, neighborhood associations, researchers, and the media. Such convergences are key to initiating legal and policy processes, for participation as well as implementation, especially in places where the state is weak or co-opted. The political will of state authorities and alliances among social movements and progressive politicians are also important for legal initiatives at a very local level. Mutual exchange and support are also essential to foster agroecology, so that peasants and other small-scale food producers and food system workers can exercise their human rights and continue to feed humanity, in a healthy, sustainable, and just way.

Moreover, the experiences analyzed in this study convey the need to work simultaneously on:

- regulating pesticide manufacturing
- usage, distribution, and commercialization
- a global ban on HHP
- and toward the transition to agroecology

Genuine transition requires changing the entire model: the predominant food system relies heavily on external inputs and is dominated by corporations, and has globalized value chains and trade and investment at its core. Any attempt to create pesticide-free territories must take place within the framework of food sovereignty and agroecology, and legislation and policies regarding pesticides must be carefully assessed for their possible impacts on food sovereignty, the social fabric, ecological circumstances, and in general on the human rights of disenfranchised populations.

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