Main Challenges of Agriculture in Venezuela

By Francisco F. Herrera

The emergence and consolidation in Venezuela of a political management proposal with strong popular participation, fundamentally led by the segregated sectors of the cities and the rural population, have favored the transformation of the State, both the legal framework and the political actors. This phenomenon began with the arrival of Hugo Chávez to the presidency of the Republic in 1999, and its main lever was the development of a new national constitution. This milestone, in the history of the country, marks the beginning of a stage in the transition of the country's agri-food model inherited from a century of policies determined by oil revenue.

After two decades of a turbulent process of transformations in agricultural activity, not exempt from tensions, contradictions, and resistance, it is necessary to reflect on some challenges that require attention. The main objective is the formation of a sustainable system for food production that is technologically and culturally sovereign. In this sense, three essential challenges to take into account are described below: the programmatic inertia

implied by the recent history of Venezuelan agriculture and its leverage in the scientific-industrial model; the country's demographics after a century of oil culture; and, the undeniable transformation of global, regional and local ecosystem conditions that will determine the true potential of the country's agricultural production. These three aspects are not the only determining factors of agri-food sovereignty, but, from the governance of public policies and popular participation, they represent key nodes that require understanding and consideration for the near future.

First challenge: Oil culture

The extraction and commercialization of oil, as an economic, social, and cultural phenomenon, began in Venezuela in the second decade of the 20th century. To date, the country's economy has been based essentially on agricultural production. Over a few decades, society was reconfigured around cities, following the imposed model of progress and modernity, and leveraged the riches from hydrocarbons. Agricultural activity decreased drastically, and peasant practices and the colonial hacienda model were replaced by the implementation of the agroindustrial model promoted by the United States towards the middle of the century. This phenomenon determined drastic changes such as 1) the preponderance of food import policies and capital-intensive agricultural practices, 2) the massive migration of peasants from the countryside to the cities and oil fields, 3) the creation of agronomy faculties aimed at training for mechanized agriculture and industrial food processing, and, 4) the consolidation of an agro-industrial urban petite bourgeoisie based on the old landowners of the period of hacienda agriculture. This comprehensive transformation of agriculture in Venezuela, in such a short period, left aside the traditional forms of food production and consumption, particularly in academic and government institutions, configuring an urban population with its back to agriculture and rural life. This phenomenon was known as the oil culture (Quintero, 1972).

The combination of an overvalued currency, the introduction of foreign technologies, private capital, and State bureaucracy allowed food distribution to not depend on national agricultural production. Over time, a moderate agroindustrial sector would be generated—highly subsidized by oil revenue—juxtaposed to a very restricted and marginal agricultural activity

(Herrera et al., 2017). A port economy would be the food alternative for the country.

With the agroindustrial model, a new agricultural activity was privileged, now technical, dependent, and made up of owners of medium and large areas; for the peasantry, unproductive lands or lands removed from the productive axes that the market privileged were relegated. Concerning the distribution of land, in a synthetic and illustrative way, at the end of the 20th century, large landowners constituted 5% of land owners and had 75% of the surface; the peasantry, the vast majority of the rural population, had 6% of the land left (Purcell, 2017).

Since then, dependence on oil has characterized the country's cultural, political, and economic life, and has given rise to internal tensions and external pressures. Consequently, food security, and more recently, food sovereignty have been recurring objectives of the national political narrative.

Second challenge: the current demographics of the country

Venezuela, along with Uruguay and Argentina, constitutes one of the countries with the largest urban population in the region. This phenomenon is fundamentally due to internal migrations during the last century, as a consequence of the accumulation and circulation of capital in few cities and the few economic incentives for life in the countryside. Currently, only five cities account for about 34% of the population, and towns with more than one hundred thousand inhabitants account for 81% of the population.

The country's population, some thirty million inhabitants, is distributed mainly towards the Caribbean coast, where low water and food sovereignty increases vulnerability to scenarios of climate uncertainty and political tensions that affect the food system (production/import and distribution). The country has a network of high-flow rivers in areas with lower population density, and the highest quality soils for agriculture are distributed along the slopes of the mountain systems and the plains of the Orinoco River plain, and cover some 30 million hectares, where more than 60% are usable for extensive livestock farming. Some seven million hectares are suitable for vegetable agriculture, and half of this surface is cultivated with mechanizable crops (corn, rice, sorghum, soybeans, beans, and cotton); Agricultural production

involves less than 5% of the population, and the agroindustrial sector, as a whole, is estimated to reach only 14%.

Peasant agriculture, which although it is a category that is difficult to specify due to its similarity to small producers, has been estimated between 600 thousand and 900 thousand people, and would be the only category that has full food sovereignty within its reach. On the other hand, in the cities, and especially in the last decade, a strong urban agriculture movement has grown, which ranges from the production of some essential and short-cycle products to highly organized initiatives that include the raising of small animals, greenhouses and local markets (Alban et al. 2017). From these figures, it is clear that food production in Venezuela is primarily associated with the private agro-industrial sector in the areas of cereals, legumes, and animal protein, and the horticultural and fruit sectors to farmers and small producers; food deficits are usually made up through imports. Likewise, it is very evident that the vast majority of the country's population not only does not produce the food it consumes but is located at great distances from the main food production nodes. This reality suggests why food has become, in the recent political history of the country, an element of struggle between the tensions between the State and the private industrial sector, or between the national government and foreign interests. Both situations show a profound food vulnerability.

Third challenge: the planet is changing rapidly

Beyond the political tensions as a consequence of the oil culture or the preponderance of the urban population, another phenomenon emerges - which involves the challenge of agriculture to achieve food sovereignty - and it is the global environmental crisis. This phenomenon, sometimes referred to as climate change or the climate crisis, goes far beyond the climate: it encompasses soils, the water cycle, life in the oceans, the loss of diversity, and aspects as complex as imbalance or disruption of nitrogen and phosphorus cycles at the planetary level (Herrera et al. 2018). Such processes are producing alarming transformations in the conditions for life on the planet, and it must be said that agriculture is nothing more than an ecosystem modified to maintain it in a selected condition; Therefore, its interweaving with the dynamics of the planet's biogeochemical cycles is inevitable and any attempt to ignore this reality is irresponsible.

From an ecological perspective, perhaps, one of the contributions that reveal the depth of the planetary environmental crisis that we are experiencing is the contribution by Rockström and collaborators (2009) entitled "*A Safe Operating Space for Humanity*". This review shows how contemporary human activities are generating profound transformations of the planet's ecological systems, to such a magnitude that we have begun to transgress the limits of acceptability of some of them, which they call thresholds. The basis of this approach, which has had a high impact on the scientific community due to the clarity with which it reflects the dimension of the crisis, is that the planet is presenting new biophysical conditions that were not present during the last ten thousand years, and the transgressions to these thresholds will generate conditions very foreign to human experience throughout its history, and with greater impact on the agricultural and sedentary experience of our species. This throws us into an ecologically unknown planet, with very marked depletions of once abundant sources of life, such as freshwater, fertile soils, fishing,and pollinating insects, to mention the most conspicuous. The authors propose that the limits of the biophysical subsystems that we have surpassed, and whose consequences are unpredictable, include the extinction of species, the balance of the global nitrogen cycle, and the balance of the phosphorus cycle. Likewise, we are getting closer to pushing the limits in areas such as access to fresh water, land use change, ocean acidification, and climate change.

Without a doubt, the depletion of living conditions will accelerate the appearance of local conflicts, forced appropriation of resources, and massive migrations whose effects are only beginning to be considered (UNCCD, 2017). Therefore, it is not an exaggeration to say that we are facing an imminent global environmental crisis of alarming proportions and still unpredictable consequences. Consequently, the possibility of achieving alternatives that promote food sovereignty requires a deep understanding of the radical causes of this phenomenon; and, in the case of Venezuela, articulating them with the recognition of the inertia imposed by its history of agricultural policies and the implications that the country's vision has had on its demographics.

Political and ethical options

A necessary alternative, from the rationality and responsibility involved in generating radical changes in national agrarian policy, is to pass every

program, project, international agreement, or plan of the nation on agri-food matters through the double sieve of sustainability and sovereignty. This double sieve applies to dialogue with the multiple actors, internal and external, who stress the transformation potential of the agricultural model. It is to place in the 21st century a discussion that carries many symbols from the past that are beginning to be anachronistic in the ecological time that the planet is experiencing.

The risk of not evaluating sustainability (through the application and interpretation of indicators) is ignoring the socio-ecological capacity of agroecosystems. This omission could have medium or long-term implications, such as a decrease in food production, an increase in local poverty or migration, and tensions over access to water or fertile soils. In addition to missing the opportunity to generate planning for the agri-food system that is aware of the failures of the agro-industrial model and that, simultaneously, prepares for scenarios that incorporate transformations of ecosystem conditions.

Without a doubt, the magnitude of the planetary environmental crisis is not understood or assumed by a large part of the population. Otherwise, public policies and development plans would be made in other directions. This crisis is a co-product of capitalism, since, in its essence, this system grows from the non-rational exploitation of nature, therefore, global capitalism determines the global environmental crisis; Hence, in the face of the collapse of capitalism, it is a tactical error, with unpredictable consequences, to expect viable alternatives to the environmental crisis to be proposed within it. The West is left with few references to look for, but in our territories, we are not only the West: we have rich references and multiple alternatives. Traditional forms, practices, collective memory, identity, and worldview. They are invaluable in the face of a crisis that presents few references, which, combined with agroecological hybrids (scientific thinking-peasant thinking), are rationally more coherent than corporate, techno-scientific offers. However, it should be noted that the disproportion between the urban and rural population is a pending task within the Venezuelan reality.

On the other hand, building the sustainability of global and local agri-food models is not only desirable, it is urgent. The evidence is so compelling that this need is one of the very few spaces where ecology, the environmental face

of capitalism (Herrera et al., 2018), confronts one of the bastions of the development model and its current neoliberal version (Rockström et al., 2009). The time for enunciated, vacuous, media sustainabilities is running out; they must be shown, tested, measured, and evaluated with popular participation. This text proposes using tools such as socio-ecological resilience, the evaluation of life cycles (around the agri-food fact), or the ecological footprint, which can provide quantitative references for a variable that has been fundamentally discursive, but rarely shown or quantified, such as sustainability.

Finally, it is essential to assume that political and cognitive tensions within the national scenario will not cease for a long time; greater will and more awareness of the planetary environmental condition are required; as well as broad and democratic debates to travel radically transformative paths. The State must assume a coherent understanding of the historical moment. The dispute over territories by the power actors of an economic system that is collapsing in Venezuela, and beyond our borders, invites us to strengthen the social bases and their direct access to the conditions for life; and that is where water, soil, seeds, political organization and information are decisive. Political organization and awareness of the historical moment are fundamental elements for people who aspire to achieve food sovereignty.

Reference

1. Alban, R., Arteaga, M. and Herrera, F. (2017). Urban agriculture in Caracas: diagnosis of agro-productive spaces from a socioecological perspective. Rural Development Notebooks, 14(80): 1-19.
2. Herrera, FF, Domené-Painenao, O. and Cruces, JM (2017). The history of agroecology in Venezuela: A complex and multifocal process. Agroecology and Sustainable Food Systems, 41 (3–4): 401–415.
3. Herrera, F.F., Lew, D. and Peña, E. (2018). Academic ecology in Latin America in the face of the environmental crisis I: historical elements constitutive of its current positioning. Interciencia, 43 (11): 799-807.
4. Purcell, T. F. (2017). The political economy of rentier capitalism and the limits to agrarian transformation in Venezuela. Journal of Agrarian Change, 17: 296-312.
5. Quintero, R. (1972) Anthropology of petroleum. XXI Century Editors.
6. Rockström, J., Steffen, W., Noone, K., Persson, A., Stuart III Chapin, F., Lambin, E., Lenton, TM, Scheffer, M., Folke, C., Schellnhuber, HJ, Nykvist, B., De Wit , CA, Hughes, T., Van der Leeuw , S., Rodhe , H., Sörlin , S., Snyder , PK, Costanza , R., Svedin , U., Falkenmark , M. , Karlberg , L. , Corell , RW , Fabry , VJ , Hansen , J. , Walker , B. , Liverman , D. , Richardson ,

K. , Crutzen , P. y Foley , J. (2009). A safe operating space for humanity. Nature, 461: 472-475.
7. UNCCD (2017) The Global Land Outlook. United Nations Convention to Combat Desertification. Bonn, Alemania. 337 pp.