

Journey Towards Sustainable Development: A Case Study of Chile with Reference to Avocado Production

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ABSTRACT

In the rapidly changing global affairs industries and service sectors played crucial roles in boosting the economic growth in which contribution of the primary sector is unavoidable. The country which has unique geography span, a diverse range of landscapes, from deserts to mountains to coastal regions, Republic of Chile which is a long, narrow country located in the south western part of South America. This paper assessed the various issues associated with the farming especially with reference to the production of avocados in Chile. Several issues have adversely affected not only the avocado farming production but also contributed in the environmental degradation. The journey of Chile in order to accomplish its sustainable development goals with various measures is explained through this paper.

Key words: Avocado, Water Crisis, Mining, Export, Sustainable Development

“Agriculture is our wisest pursuit, because it will in the end contribute most to real wealth, good morals & happiness.” – Thomas Jefferson

Introduction

Political History of the Republic of Chile

The political history of Chile has witnessed several significant events, process of transitions and struggles. It has been reshaped by colonisation which gained in the year 1818 after a long struggle. After receiving independence Chile has gone through the process of modernization which includes various reforms. The 20th century has brought both the rules of democratic as well as an authoritarian form of government.

Over a period, Chile has started witnessing various challenges in the form of social movements in

diverse areas like education, healthcare, pension reforms, and economic inequality. However, the prominent social movement that had taken place in Chile in 2019 which demands constitutional changes in terms of bringing social equality. The implications of the movement were so powerful that it has brought a great change to replace the old constitution through the referendum. “On 25 October 2020, 78 per cent of Chileans participating in the referendum voted in favour of a new constitution, and 79 per cent supported a Constitutional Convention of elected citizens to write it, rather than a mixed Constitutional Convention, half of which would have comprised members of Congress and the other half specially elected representatives.”¹

Materials and Methods

The research paper is highlighting the fact of envi-

(¹Professor, ²Assistant Professor)

ronmental challenges faced by Agriculture in the Republic of Chile whose economy is predominantly dependent on exports. It considers the pilot study of the production of Avocados. For this study, authors have followed descriptive and analytical way of understanding and used case study method.

Chile has been one of the world's largest producers of avocados. Over a period, due to changes in the weather conditions, market demands, and other factors, avocado production has been subject to fluctuations. Through this paper the authors have tried to understand key issues associated with avocado farming.

Water Crisis in Chile

Water scarcity has been major issue in Chile. The impacts of the continuous climate variability droughts and over extraction of water for agriculture purposes have affected the farming of avocado. "Even in the absence of climate change it has been estimated that around 44% of the global population or more than 3.2 billion people would have faced water scarcity in 2020, percentage that is expected to reach 53% by 2050, only due to an increase in population."²

From 2008 to 2015 many rivers in Chile were declared as suffering from water scarcity which is inflating the challenge of food production. This uncertainty of agriculture is closely linked to the concentration of the land and water resources in the hands of few. "In fact, a major concern for Chile has been the way in which the policies regarding water governance are potentially magnifying the inequality in access to water (i.e., allocating more water resources to larger agricultural producers instead of for human consumption or small farmers)."³The government in Chile has granted water rights to private parties. Hence, indigenous population started facing great difficulties for traditionally using their water resources. Water extraction specifically for the avocado farming has escalated the challenge of water crisis in Chile and vice-versa. "Local residents and outside observers have explicitly characterized the water scarcity in Petorca as not a result of climate change, but rather legally-sanctioned over-extraction and illegal water diversions by large agribusinesses (Donoso, 2015).

Growth in Export

Besides mining industry other sectors like agriculture, fisheries, forestry, and tourism contribute in

the national economy. Due to the diverse geographical conditions, the economy is largely dependent upon the export of certain products which is the main source of foreign direct investment for the government. The growing demand for the avocado has helped to increase agro-production.

Over a period, the production of avocados has increased in overall Latin American States. "Even before the boom, the area set aside for avocado production grew from 31 thousand hectares in 1980 to more than 106 thousand hectares in 2009, according to the Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (Sagarpa), a Mexican government body (Gosling and Arnell, 2016). The export of Chilean avocado has been increased over a period.

Urbanisation, Deforestation and Climate Change

The growing population and its demand have up-raised the challenge of the deforestation as forests were used to avail the land. This has created the problems of destruction of some species, habitat, loss of biodiversity as well as erosion of soil. Also, the growing urbanization has adversely affected the agricultural production.

Since climate change has been one of the greatest challenges to which even Chile is not an exception has adversely affected avocado production. "Future impacts of climate change are also likely to be highly regionally variable across Chile. In central regions, it is expected that climate change will be characterised by a decrease in rainfall and a greater proportion of precipitation falling as rain (Nolte, 2022).

Impacts of Mining

Like agricultural products, Chile is also one of the greatest producer and exporter of the copper as well as second largest producer of Lithium. Majority of the copper mines are owned by the private mining companies. Hence, while taking production environmental concerns are neglected with the motive of earning more profit. Water recirculation, deploying modern technology and conducting remote operation for maintaining security are some of the reforms which have been brought in the mining.

Vulnerability to Natural Hazards and Social-Economic Implications

The geostrategic location of Chile tends to witness the natural hazards like continuous earthquakes, floods, wildfires, extreme temperatures, storms, vol-

canic eruptions etc. Also due to the desertification of land in the north region of Chile, barren land is spreading towards the southern region. It has shifted the growers to relocate themselves in the central and southern region of the country.

Significant forest land was converted into the cultivable land for the avocado production because of growing demand. "Wages in the avocado plantations of Michoacán are considerably higher than for other low-skilled jobs in the region. A plantation worker can earn US\$ 60 per day, which is significantly higher than the US\$ 5 minimum wage in Mexico, making the work very attractive (Reynhout, 2019). Water rights and land availability in the hands of the rich farmers has exploited the poor farmers. Also, the relationship between the rich farmers and the local communities becomes unhealthy as the local communities were displaced.

Disaster Management Legislation: Response by the Government

In order to protect agriculture and production and to safeguard the export government has come up with the following various legislative frameworks.

- Ministry of Interior and Public Security's National Office of Emergency (ONEMI) - To plan, coordinate and carry out prevention, mitigation, alert, response, and rehabilitation activities to safeguard individuals, their property, and the environment.
- Emergency Operations Committees - Working at various levels
- A National Disaster Risk Reduction (DRR) Platform - It brings together several stakeholders including public agencies, private sector, academia, scientific, technical bodies, UN agencies, and volunteer organizations – to better coordinate the country's disaster risk reduction activities.
- National Disaster Risk Management Strategic Plan - It builds institutions, strengthen early warning and monitoring systems, promote a culture of prevention, and reduce underlying risk factors

Conclusion

Way Towards Sustainable Growth

The economy of Chile has been more reliant on the export of agricultural productions such as fruit and

vegetables, wine, meat, apiculture, and forestry etc to regions like Europe, North America, Asia as well as South American countries. As a part of reforming measures, the production of the avocado is shifted to those areas where water resources are sufficient. Its production has been reduced in drought prone areas. Measures have been taken such as implementation of drip irrigation system which will reduce the soil erosion. Terrace farming, cover crop system, forest station programs can be promoted by the government in order to move towards sustainable growth.

General Water Directorate (The DGA) manages the system and enforces national water policy. "The Water Code was reformed in 2005 in order to strengthen regulation on groundwater management and set minimum flow requirements for new water rights to preserve the resilience of water bodies."⁸ Government has taken initiative regarding the policies of agriculture water use management, policies to control agriculture water quality as well as policies to manage climate induced water risks. Even the mining sector has been investing in new technology in order to achieve climate change goals of the country.

Although, these reforms have been implemented slowly and gradually by the government however with these best sustainability measures for avocado in Chile, the farmers would be able to lessen their environmental degradation as well as continue to produce high quality crops. The economy of the country can be boosted.

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Informed consent: The manuscript in part or in full has not been submitted or published anywhere.

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