

A Study of the Role of Hinduism on Agriculture in Relation to Climate Change: The Case of India

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Abstract. India is the seventh-largest country by area and the second-most populous one. This vast country is home to most of the world's Hindus with Hinduism to be the largest religion there (80% of the population). Agriculture is the main activity in the rural areas of India, contributing a significant figure to the Gross Domestic Product of the country. However, climate change seems to have become a harsh reality with increasingly negative consequences to agriculture and quality of life, in general. Throughout the ages the impact of Hinduism on the agriculture in India seems to be considerable. The purpose of the present study is to discuss the aforementioned impact on agriculture in the Indian subcontinent taking into consideration climate change. Appropriate research and review articles from reputed publication houses and other trustworthy sources were scrutinized and included in our study. Results showed that Hinduism is definitely connected with some traditional agricultural practices generally accepted and applied by the population in India. This connection may play a crucial role to achieve sustainable farming and life quality improvement for the farmers, and not only, in the Indian subcontinent, weighing and mitigating the negative consequences of climate change.

Key words: agriculture, climate change, hinduism, India, traditions, religion.

Introduction

Hinduism is one of the major religions with 1.1 billion believers worldwide (Hackett et al., 2017: 34). The term "Hinduism" refers to the whole of the Hindu civilization and culture (Enzyklopädie der Religionen, 1990: 126) without, however, attributing clear common religious characteristics, considering beliefs and practices, to the believers. Yet, it is thought to be one of the world's oldest religions (Kurien, 2006: 723) and its precise period of birth is therefore unknown.

More than any other religious system, Hinduism applies division on its subjects, i.e. it embraces the idea that not all men are equal, therefore they must be strictly divided into social-professional groups. The existence of the four Varnas (colours) influences, not only the social status and professional choices of the people, but also their general perception of being, resulting in a variety of religious practices and rituals (Boesche, 2003: 76). Furthermore, the third Varna, i.e. caste, – the members of which are called Vaishyas – was originally consisted of farmers and merchants (Meyer-Rochow: 2009: 1-10).

Hinduism is the default religion of indigenous people in India, a vast country, the second-most populous one and home to most of the world's Hindus. Apart from the Indian subcontinent, Hinduism used to include in its numbers the peoples of neighbouring countries like Pakistan or Bangladesh, as well. The latter ones have been independent countries since 1947 with the vast majority of their population following the Islamic religion. Nowadays an approximate 80% of the Indian population identifies themselves as Hindus followed by Nepal and Mauritius (India's religions by numbers, 2016).

Agriculture is the major professional activity of people in the rural areas of India (Aubron, 2015: 1-21) and denotes the many ways in which crop plants and domestic animals sustain the global human population by providing food and other products. However, the word "Agriculture" has come to subsume a very wide spectrum of activities that are integral to agriculture and have their own descriptive terms, such as cultivation, domestication, horticulture, arboriculture, and veg culture, as well as forms of livestock management such as mixed crop-livestock farming, pastoralism, and transhumance (Harris and Fuller, 2014: 104-113).

Agriculture in India seems to have been importantly influenced by Hinduism, throughout the ages, taking into account that Hinduism has influenced the daily lives and beliefs of the Indian people (Deshpande, 2010: 462). The agricultural production consists one of the main duties of the third caste of Hinduism, the Vaishyas, according to the social rank order established. The dominant power of producing food, by cultivating the land or by cattle rearing, and wealth in general, has been attributed to this low-rank caste and the fact is often manifested in religious literature (Kane, 1997: 84). Yet, it is worth noting that further division and categorization to sub-castes exist. Linguistically speaking these groups obtain their names by the equivalent local words describing a specialization in farming (Ghurye, 2008: 68).

Taking into account the aforementioned analysis, the purpose of the present study is to discuss primarily the impact of Hinduism on agriculture in the Indian subcontinent. The selection of India considering the study in hand was made not only because the vast majority of the Indian population identify themselves as Hindus, but also because this is the land where the system described above both evolved and bloomed. However, the study in hand, will concentrate on practices generally accepted by the population.

Methodology

The methodology used for the composition of this article has identified the reviewed literatures in Google scholar, and has included empirical research papers from reputed publication houses such as Lexington Books and Elsevier; the Statistics Office of the Food and Agriculture Organisation (FAO) of the United Nations publications and proper cited review articles. Keywords, such as Agriculture, Hinduism, India, Traditions, Religion and Climate Change were used to locate suitable articles. The articles filtered were the ones related to agricultural and farming traditions of India, traditions of Hinduism related to food and climatic change. Theoretical articles with core concepts, related to the topic of our study, were also included.

Results and Discussion

Agriculture in India: A review on past and current situation

Indian agriculture appears at a very early stage of human history. Archaeological evidence shows that it dates back to 9000 BCE (Gupta, 2004: 54-59) with elements of cultivation of plants and domestication of animals followed by permanent settlement of the population. Later on, during the mature period of Bronze Age (2600 – 1900 BCE), the Indian Valley Civilization thrives and demonstrates, apart from the cultivation of new crops, such as wheat and barley (Jarrige, 1986: 63-113), new methods to assist the growing of the crops, an interesting example of which is an extended canal irrigation system (Alam et al., 2014: 118-127).

The subcontinent covers, nowadays, an area of about 3.3 million km² (National Portal of India) (National Portal of India. Profile, 2019) of which the arable land covers approximately a 53% of the total area (Macrotrends 2019). It is interesting to note that the

majority of this land is cultivated to produce food and that according to the Statistics Office of the Food and Agriculture Organization of the United Nations in 2017, India came first in producing fresh fruit and spices, which is indicative of the variety of the products coming only from the fields and plantations. According to the same record, the country came second in producing wheat, rice and fresh vegetables (Faostat, Countries by commodity, Rankings, 2019). The amounts of the total produce seem to have largely increased demonstrating a significant raise of between 40% and 500% within the last 40 years (Handbook of Statistics on Indian Economy, 2019). Ostensive is the fact that in 2012 a total of 277.4 million metric tons of horticulture produce exceeded grain produce for the first time which makes the country the second largest producer worldwide (Bera, 2015).

Another sector in which the country demonstrates a competitive character is animal farming. The Statistics Office of the Food and Agriculture Organization in 2017 categorized the country coming first in buffalo and goat milk production and second in cow milk and goat meat (Faostat, Countries by commodity, Rankings, 2019). Dairy products play an important role in the dietary habits of the indigenous population in general which makes the persistence of multitudinous livestock mandatory.

Yet, it is not only the exporting needs or the commercial activity of a country which defines the choice of produce. A pivotal factor is the number of the population that must be fed and live on this produce. The total of the Indian population amounts to 1.324.171.354 people according to the United Nations (World Population Prospects, 2017). It is self-understood, in this case, that each and every person is somehow involved in farming either by using the produce for nutritious reasons or by transforming it into a means of gaining wealth, as well.

The choice of crops, which are cultivated in India, is nothing but random, though. There are four major pillars which have formed the scenery of the Indian farming within the centuries. The first pillar is the infrastructure before, during and after the colonialism and the second one is the commercial needs of the country (Bhaga, 2019). These two, although really important and defining of the picture we get today, are not going to be the subject of thorough analysis as they are beyond the scope of our study. The third pillar refers to the climate of the area which cannot, of course, be disregarded as a factor. The fourth pillar, referring to dietary habits of Hindus and other relevant customs, is of utmost importance because it allows an insight of a tradition so closely connected to the indigenous religion.

Role of climate

One representative example, regarding climate, is monsoons which impact Indian agriculture in a high degree (Singh, 2014: 268-278). In addition, the climatic change seems to have become a harsh reality leading to possible decisions concerning the adaptation of the crop cultivations to these new conditions, as a necessary option for a sustainable agriculture (Ahmad, 2017: 91; BIRTHAL, 2014: 474-487) determining crop zones for agricultural land-use (Das et al., 2018: 103-135). Note that both climate change and population pressure have a negative impact on the production and productivity of agriculture resulting in poverty and unequal wealth distribution in India (Singh, 2014: 268-278).

Hinduistic traditions and agricultural practices

The basic cosmological idea of continuity, as described in the sacred texts of Vedas and, specifically, in the Tattiriya Upanisad, links the Divine to the five basic elements (Pancha Mahabhuta), i.e. bhūmi (earth) (Gopal, 1990: 98), ap or jala (water), tejas or agni

(fire), marut, vayu orpavan (air or wind) and vyom or shunya (space or zero) or, differently mentioned, akash (aether or void), creating an unbroken continuity and succession. The elements themselves are linked to plants; plants are linked to food; food to life. Food comes from God and life comes from food (Khare, 1992: 62).

An understanding of the traditional medicine, Ayuverda, would, in this case, be helpful, as well. Ayuverda was developed in the subcontinent after the original knowledge had been delivered from God Dganvantari to the wise men of Varnasi who then transmitted it to a group of physicians (Zysk, 1999: 125-145). Scientists tend to characterize the method as pseudoscientific, however, it is true that it has been used for thousands of years and it has established more than a few eating patterns throughout the country, therefore, has also defined the eating habits of the people. Also, in general, the concept of reincarnation in which Hindus believe along with the sanctity of life and both resource conservation and safe-guarding health, determine their eating habits through food taboos (Meyer-Rochow, 2009: 1-10).

More specifically, another factor, which contributed to the formation of the eating patterns of the country, is vrat, i.e. fasting. Fasting is generally defined as willingly reducing or minimizing the consumption of food, or certain foods, and drink. Adding the term "religious", the phrase indicates the dereliction of the satisfaction of human needs in order to focus on prayer and connection with the Divine. Fasting is a practice present in the majority of the religions and religious formations around the world and Hinduism is no exception (Pasayat, 1991: 46). We can, therefore, see the people fasting or feasting on a nearly daily basis, throughout the whole year.

Another issue of agricultural interest Hindus take seriously into account is harvest. Harvest has traditionally been considered to be the peak point of the year as not only could the farmer see all their hard work pay off, but they could also ensure that throughout the rest of the year the family would have enough to eat. The same mentality is met in the subcontinent as well where harvest is specially celebrated by the whole community. This way the food is distributed to the whole community so that even the poorest members can have descent access to nutritious food. The customs may change from one area to another, yet, the core of the celebration remains similar – thank the Divine for the rich harvest (Pasayat, 1991: 46).

There are but a few massive celebrations held in the territories of India, yet, there will be only few mentioned to demonstrate the overall concept of the importance of food. The agrarian year is divided in five periods when five important activities are performed by the farmers; sitayajna (tilling), pravapana yajna (sowing), pralambana yajna (cutting the crops), khala yajna (harvesting grains) and prayayana yajna (preserving the produce) (Pasayat, 1991: 46).

A strong example of these celebrations could be Magh Bihu, a harvest festival held in the Northeast India, in the area of Assam. The week long festivities are held in the mid-January – starting on the 29th of Pooh – and mark the end of the harvest season. It is the time when there is abundance of everything and it is the time when the farmers enjoy the fruit of their hard labor. A special part of it is fasting and praying while later feasting and exchanging blessings brings the folk together (Sharma and Gupta, 2007: 21-47). The specialty enjoyed is, among others, rice cakes called Shunga Pitha and coconut sweets named Laru. The same celebration takes place throughout the subcontinent but carries each time a regional name. The commonplace is the dedication of the merrymaking to the deity of the Sun.

During the same week, Mattu Pongal is celebrated. This is a celebration of the cattle which exemplifies and, at the same time explains, the importance of the cows in India

(Verma, 2000: 26-32). Not only are they used in agriculture but they also have a gentle nature. The folk widely depends on cows for tilling the fields, for being provided with milk and dairy products overall, as well as, far being provided with their excrement which is used for both as fertilizer and fuel. It is no wonder, after all, why they are deeply respected and not regarded as a meat source.

The preservation of the produce is, on the other hand, an important issue as it has been traditionally depended on the weather conditions of each region. Meat and fish would be typically preserved in caves, if the weather was cold and, if not, they would be either dried in the sun or smoked. Vegetables would be pickled or sealed. These are techniques generally used on a domestic scale. Yet, nowadays, India suffers great losses of food produce due to inadequate storage and distribution methods which, actually, leads to wasted foodstuffs. Recently a United Nations initiative is aiming at coordinating mechanisms to be applied in order to avoid food wasting (Presentation of the SAVE FOOD Study in India, 2019).

The deep connection between the Divine legacy and the application of their commands can only be in detail described while observing the everyday practices of the Indian people as their routine involves a whole of, longer or shorter, rituals all dedicated to their cosmological ideas according to which the unity with the whole consists their major life goal.

The right combination of eating patterns of Hinduism with resource conservation⁵ may guide agriculture of India towards a more sustainable direction taking into consideration the various limitations derived mainly from climate change and population pressure. The mitigation of their negative consequences and the relief of the population, as a first step, is a challenging bet which requires strong collaboration of state and citizens for the common good from a general point of view.

Conclusion

Conclusively, this study connects Hinduism with some traditional agricultural practices generally accepted and applied by the population in India. Nowadays, the implementation of modern agricultural methods in India have had several problematic aspects, the most important of which is the degradation of the quality of life of farmer. This degradation has been steadily strengthened by the climate change, which hits harder as time passes, and the population pressure. A balanced mixture of state-of-the-art and traditional agriculture methods seems to be necessary more than ever so as to achieve both sustainable farming and life quality improvement for a great portion of the population of this vast country, weighing the negative consequences of the climate change and finding ways so as to be mitigated. Definitely Hinduism traditions of agricultural interest have the potential to play a promising role towards this direction. The challenge is worth the effort.

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