

**How do variations in the Human Development Index (HDI) among  
BRICS countries correlate with differences in agricultural policies  
and farmer welfare**

Research Paper By Palak Samani

## **A Brief Introduction**

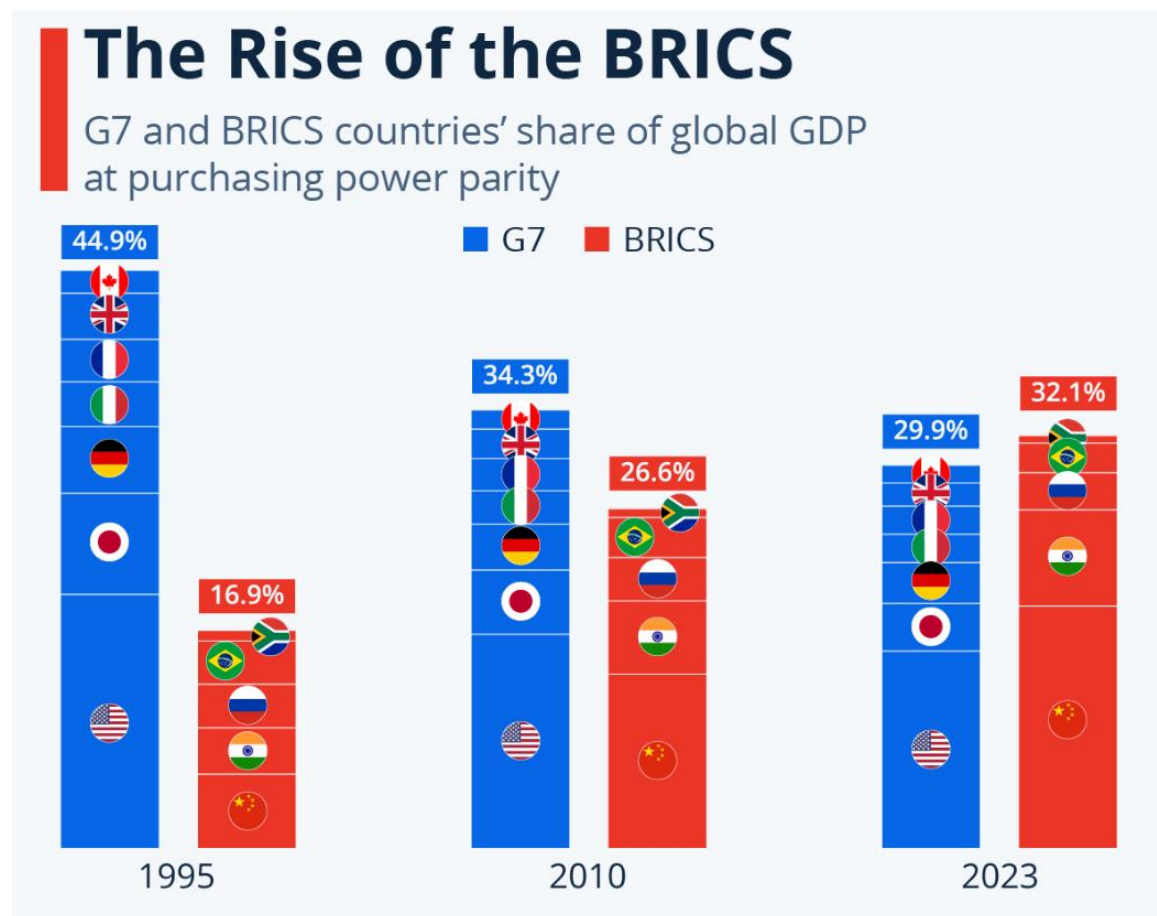
BRICS, which has evolved to become BRICS+ now, is an acronym used to refer to an inter-continental and intergovernmental cohort, currently made up of 10 permanent member countries. The term ‘BRIC’ was originally coined in 2001 with the publishing of “Building Better Global Economic BRICs” by British economist Jim O’Neill during his tenure at Goldman Sachs, a major american investment banking firm (O’Neill, 2001) as an investment term for marking the upcoming opportunities in emerging international markets and grouping certain countries on the basis of similar trends in economies. Jim believed that by 2050, the founding 4 countries of BRICS+, Brazil, Russia, India and China, would dominate the world market and would have a higher growth rate than G7 countries but he did not suggest that they might form a union like G7 or European Union (Chen, 2024).

The first official BRIC summit was held in Russia in 2009 and was attended by Brazil, Russia, India and China (Houlton, 2009). Since then, the meetings are held annually. South Africa attended the second meeting as a guest in april 2010 and then in september, joined the group officially, hence giving the group its abbreviation, BRICS (Acharya, 2023). The latest BRICS summit that took place in Russia in October 2024 hosted four new member countries; Iran, Egypt, Ethiopia and United Arab Emirates and presented its motto, “Strengthening Multilateralism for Fair Global Development and Security” (IRNA, 2024). In the most recent development that occurred in January 2025, Indonesia, which is the fourth most populous country in the world, is now a member of the association. Before the formal joining in of Indonesia, the group was home to nearly half of world’s population and accounted for almost 35% of the global GDP. The data has certainly changed now (Deutsche Welle, 2025).

Over the years, the association has certainly become one of the major diplomatic forces in the world. Owing to its notable efforts in tackling climate crisis, medical science advancements, military alignments and its ability to form independent economic networks, the group is now perceived as a counterpart, and sometimes even a threat to the group of first world countries, G7 in its way of challenging the established international world order and establishing an alternate one (Mooradian, 2024). The United

States of America has repeatedly shown concerns over the rumors surrounding BRICS+ nations bringing out a new currency that might dethrone the US Dollar in trade.

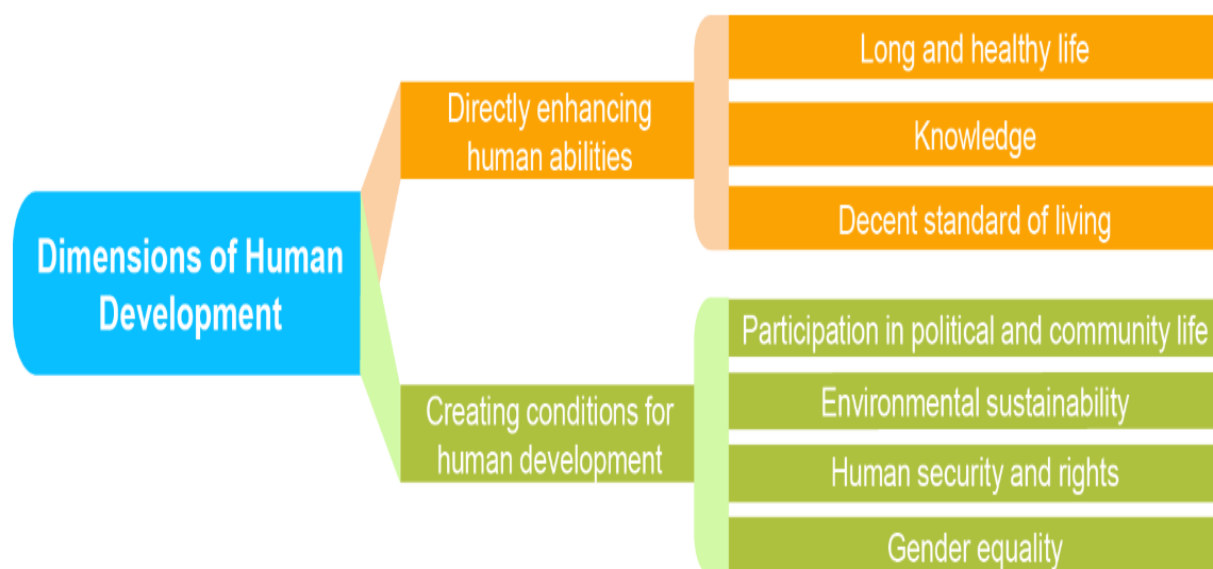
The US President Donald Trump has even warned the association and said that he would impose a “100% tariff” if they “play with the dollar”. BRICS have, though without an official reply, denied such rumors time to time (ET Online, 2025). This has however not deterred the US President from taking digs at the union and recently, claimed that the union has gone silent since his threat of over 150% tariff and even assured that they have broken up the alliance too (Singh, 2025). It can not be ascertained now as to what the future holds for BRICS but nevertheless, these recent developments definitely point towards the growing influence of the association on the global stage. The following graph shows G7 and BRICS’ share in global GDP in 1995, 2010 and 2023.



(Ritcher, 2023)

## HDI and Agricultural laws in BRICS

Human development Index (HDI) is a statistical tool developed by Pakistani economist Mahbub-ul-haq, in collaboration and being mindful of renowned economist Amartya Sen's theory of 'capabilities' which positively considers human capabilities and non monetary aspects of human life instead of mere financial growth. HDI was first introduced in 1990 when the United Nations Development Programme (UNDP) published their first human development report (HDR) of 177 countries. The purpose of HDI is to give out one single index that covers aspects like enrolment in schools, infant mortality rate etc. and relied on three major aspects to study the quality of human life: longevity and health, access and availability of education and a decent standard of living (Stanton, 2007). In Mahbub-ul-haq's words, his major purpose to develop such an index was "to shift the focus of development economics from national income accounting to people centred policies" (Ul-Haq, 1995) but more than adhering to the voices that demanded to dethrone the GDP based ranking and measurement for countries, the HDI also plays a major role in making this process more environmentally sustainable and gender inclusive too (Outreach, 2015).

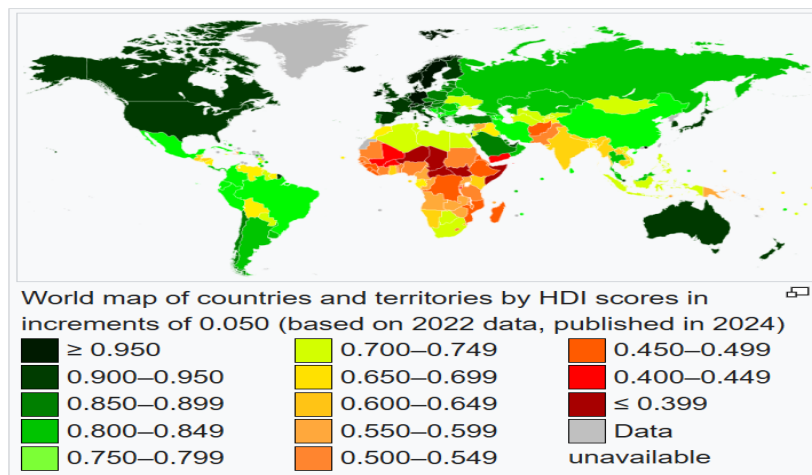


(Outreach, 2015)

Gradually, the methods of measurement have evolved in order to obtain most accurate and real-time results. For example, the 2010 Human Development Report worked out on the newly introduced IHDI

which is inequality adjusted HDI. It did not refute HDI but said that the ‘real’ and practical HDI was IHDI because this was the maximum potential HDI could reach if there was no inequality (Human Development Reports, 2015). Furthermore, to classify countries under categories that provide brackets like ‘very good’, ‘medium good’ and ‘low’ states of human development, the UNDP suggests a HDI marking system that has cut offs alongside ranking the countries. Countries having an HDI score of less than 0.550 are considered low on human development scale, countries scoring between 0.550 to 0.699 are considered to show a medium level of human development, countries with a HDI score of 0.700 to 0.799 suggest high levels of holistic human development and lastly, countries with a score of 0.800 and above are considered to be most developed when it comes to human development (Human Development Reports, 2020).

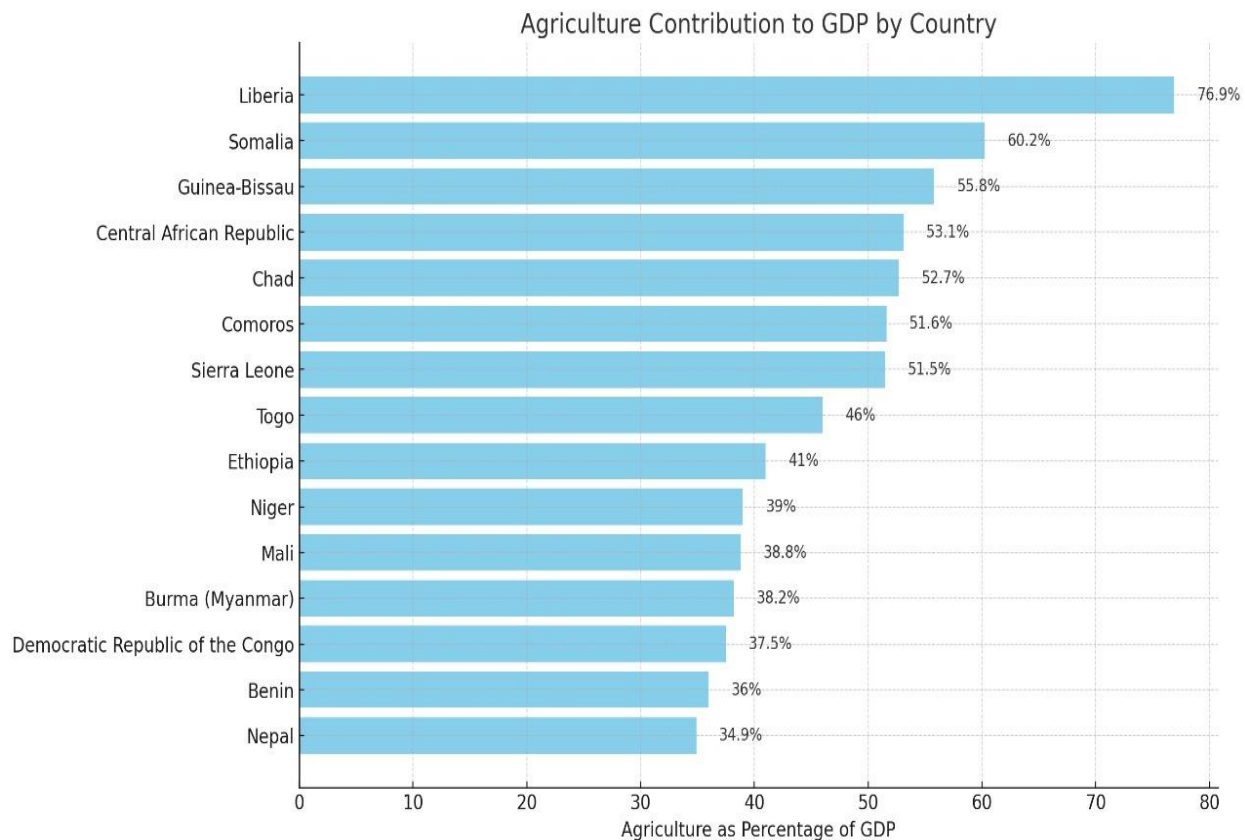
For this research, it is very important to discuss the position of BRICS+ countries in the HDI rankings and markings. In the most recent Human Development Report published in 2024, the HDI score of four founding members of the association; Brazil, Russia, India and China were 0.760, 0.821, 0.644 and 0.788. Egypt, Iran, Indonesia and South Africa were all categorized as having a good level of human development with HDI scores of 0.728, 0.780, 0.713 and 0.717 respectively. The highest score amongst the BRICS+ nations was registered by the United Arab Emirates or UAE as 0.937 and the lowest was marked at 0.492 by the east African nation, Ethiopia. When it comes to rankings, no BRICS country could get within the list of top 10 world countries with the best HDI. UAE has the best ranking among the group members at 17th position, followed by Russia at 56th, China at 75th, Iran at 78th, Egypt at 105th, South Africa at 110th, India at 134th and Ethiopia at 176th. It is significant here to note that where on one hand, BRICS+ countries like UAE, China, Egypt, Indonesia, India and Ethiopia have shown positive signs of Human Development and upscaled their respective HDI rankings, South Africa, Russia and Iran have got slightly demoted in the ranking list (UNDP, 2024). Given below is the world map and HDI scores:



(UNDP, 2024)

When it comes to the link between agriculture and HDI, HDI markers do not directly take into consideration the agricultural growth and development of a country to assess its level of human development and so, to establish a link between the two is not an easy task because different countries have differently suitable conditions for agriculture owing to differences in geography, agricultural technology and climate. It is, however, an established fact that food availability; its production, distribution and storage are definitely among various other primary concerns of any country. Especially in countries that are considered under-developed or still developing, agriculture does not only provide food; it is also an important working sector and provides livelihood to a large workforce. Moreover, the primary sector is undeniably the most ancient sector among all the sectors of the economy. Even today, it forms the core of the economy for many countries around the world. According to a study in 2017, some countries rely on agriculture for more than three quarters of their economic needs and multiple others for more than half of it. Most of these countries lie in Africa, are relatively poorer than the rest of the world and are advised perpetually to diversify their economies. For example, in Liberia, a country in western Africa, agriculture accounts for almost 77% of the GDP. The share is over 50% for many other African countries like Chad, Guinea-Bissau, Sierra Leone and so on. One of the BRICS, Ethiopia, relies on agriculture for 41% of its economic needs too (Sawe, 2017). The share of agriculture in countries like those mentioned above is huge

and should be optimally used in the country's development. It is, however, not always the case. Given below is a graphical representation of countries most dependent on Agriculture for their GDP needs.



A very overt and common link between these countries is that they are not very affluent. To put things into perspective, according to another study in the same year, it was found out that many first world countries like the UK, Germany and France spend a significantly lesser percentage of their GDPs on agriculture, which is 0.61%, 0.75% and 1.68% respectively. Another BRICS country, South Africa, is also on the list of countries that spend least on agriculture, with agriculture accounting for only 2.49% of its GDP (Burton, 2017).

This does not mean that the most developed countries around the world do not rely on a set quality and sufficient quantity of food as needed by these agrarian nations in their day to day lives. What it means is that with changing times and advent of technology, it has become a necessity for nations to mechanize and optimize agricultural practices. What it also suggests is that merely analyzing the agricultural set up of

a country can not be a set parameter to monitor its growth because of vast differences in geography, availability of resources and climatic situations. This analysis further deepens the complexity of the subject at hand which is correlating agricultural laws and HDI. It has now become clear that although agricultural dependency, output and management might not directly be the parameters that represent human development of a country but is certainly important and the underlying links should be explored more. This research plans to go beneath the surface and uncover the same.

As of BRICS, Before the inclusion of later five members, the alliance was responsible for producing 42% and consuming 40% of all the grains produced globally. As noticeable, both production and consumption of grains by the BRICS countries is nearly half of the entire world, which is significant statistical data. After the merger of four members before Indonesia in 2024, the annual grain output is supposed to increase and reach a staggering 1.24 billion tonnes in production and 1.23 billion tonnes in consumption. While India, China, Brazil and Russia account for the most production among the group, the major exporting countries are Russia and Brazil (Donley, 2024).

Ethiopia is however, not the only agriculture reliant economy among the BRICS+ countries. Various other more influential and richer countries in the group are also leaders in agricultural production and related affairs. An example of Russia illustrates this better. Following the devaluation of the Russian Rouble in 2014 and imposition of many international sanctions on the country owing to its military activities, Russia has understood the importance of these food laws very well and ever since, has been diligent in the process of framing and adopting them. In January 2020, Russia revised its food security doctrine that was first adopted in 2010. The revised law now focuses on preventing genetically engineered seeds from being cultivated and registers this as a major step in national interest pertaining to food security and self-sufficiency, apart from diversification of crops that includes emphasis on vegetables, melons, gourds, fruits and berries (USDA, 2020). Similarly, India, Brazil and China, the other three founding members, have also adopted significant laws that have helped them become more agriculturally advanced and autonomous. An analysis of certain specific laws related to agriculture that BRICS+ countries have adopted would reveal how they've impacted the respective countries' growth and development.



Brazil, for example, has recently passed the law 15.070/2024 which narrates rules for managing everything in the process of cultivation, ranging from cultivation of crops to waste disposal, in an environment friendly manner and has put the country as a forerunner in sustainable agriculture. The law focuses on usage of bio inputs, which are the materials derived from biological sources, and aims to minimize the use of chemical inputs as a healthier alternative. This sustainable approach also facilitates pest control and disease management alongside promoting research and development in the associated fields. It was not until 1973 that Brazil outlawed slash and burn agriculture and according to a report from 2012, even after 40 years of passing the law, the charred plant waste continued to seep in rivers and subsequently, in oceans, threatening marine life and biodiversity (Nuwer, 2012).

China has also been careful and noteworthy in addressing agriculture in its own unique fashion. The laws in Chinese agriculture are different from most of the world and here, all farmland is the property of the government. The farmers are provided the land on decade long lease through the agricultural unions specifically designed for the same. In December 2023, China published the final version of its “Law of the People’s Republic of China on Assuring Food Security” which sought to achieve “absolute security” in the production of key grains and achieve self sufficiency in food production. The law was finally enacted on 1st June 2024 and strictly requires the county, regional and national officers to ensure that as much as possible, the consumption needs of the People’s Republic of China should be catered to locally (USDA, 2024).

In India, there have been multiple attempts by the government in the recent past, some successful and some unsuccessful in altering the existing set up of agricultural laws. It is important here to note that although agriculture accounts for less than 20% of the GDP of the country, over half of the total population of India relies on it for livelihood (Li and Roy, 2021). In 2018, the government of India enacted the “Pradhan Mantri Kisan Samman Nidhi Yojana” or Prime Minister's Farmer's Tribute Fund which mandates the government to pay 6000 INR as a minimum support to small and marginal farmers who hold less than 2 hectares of land. Around 12 crore marginal farmers were set to benefit from it and were to receive INR 2000 in three installments (Daily Excelsior, 2019). The scheme widely gained accolades from the people

below poverty line and helped them to a good extent in gaining some control over their production and mitigating losses. But not every agricultural law has had the same fate. In September 2020, the parliament of India, under the aegis of the President passed the “Farm bills”, a set of three acts which were meant to deregulate the machinery of government run wholesale markets and allowed the farmers to directly sell their produce to the food markets.

With every passing day, the world is witnessing more and more research in agriculture and associated fields and with an upsurge in information, the governments all over the globe are shifting to sustainable agriculture and are now capable of enacting more informed laws that are specifically aimed at optimization. Agricultural laws around the world function on the principle of optimization. The target everywhere, through customized policies, is to ultimately achieve a state where it is possible to achieve maximum possible output out of the limited available resources while simultaneously protecting the rights of farmers. Sooner or later, all the nations around the world will have to realize the importance of the connection between human development and free, fair and powerful agriculture laws.

### **The case of Sangli**

The case of Sangli, especially in agriculture, is an interesting one and can prove to be significant in understanding the correlation between HDI and agriculture. Situated on the banks of river Krishna, Sangli lies in the southern part of the Indian state of Maharashtra. The region can be called an agriculture oriented district as it provides fertile land and excellent weather conditions for crops. According to official data from 2014, the district of Sangli majorly thrives on agriculture and boasts of having a huge number of people involved in agricultural activities, with nearly 80% of its population involved in some or the other step of crop cultivation (Government of Maharashtra, 2014).

There are many crops grown in Sangli, ranging from spices to grains, fruits and vegetables. One of the most significant crops among all the crops grown here is turmeric. Sangli produces around near about 70% of all the turmeric that is grown in Maharashtra and it was only in 2018 that the long pending Geographical Indication (GI) tag was allotted to Sangli by government for its turmeric production, a marker

that attests to Sangli's monopoly in the turmeric markets which also denotes why Sangli's turmeric production is one of the most fine and noteworthy not only in India or Asia but possibly, the world (Deshpande, 2018). Turmeric is a major part of the culture of the regions and also has its roots seated deep in history of the place. A very vibrant proof of this is the world renowned 'Turmeric festival' of Sangli which is full of cultural dances and performances and even hosts a competition where the farmers gather to show their personal best produce of the "golden crop". These are the reasons why Sangli is called "The turmeric city of India" (More, 2025). Apart from turmeric, the region is also an adept producer of sugarcane and earns the title of "The sugarbowl of India" (Directorate of Tourism, 2025).

Cultivation of grapes is another striking feature of Sangli's villages. India is the ninth largest grape producing country in the world. Among all the states that produce grapes in India, Maharashtra has the largest share and Sangli is its main productive district. Because it provides extremely favourable climatic conditions for grapes, nearly 30% of all the crops produced in Sangli are grapes and most of this production is exported to countries like Netherlands, Bangladesh and the UAE. For example, in 2017, around 97% of grapes produced in Sangli were exported (Malwe et al., 2022). What makes grapes a special crop is the fact that it is a fruit and hence, through right processing it becomes a dry fruit, raisin which is referred to as 'Bedana' in Marathi. The raisin market of Sangli has also witnessed a boom lately. The region is known for its diverse variety of grapes like Thompson seedless, Tas-a-Ganesh and Manikchaman which are also important because they are elongated and have sugar content level of 18-20 which makes the raisins dry faster. The raisin production from grapes is 25%, which means that from 1 kilogram of grapes, around 250 grams of raisins are produced in around a period of 12-14 days. According to the chairman of the Central Research Committee of Maharashtra State Grape Growers Association or the MSGGA, only 27% of grapes are taken further for raisin production and a mere 1.5% is utilized in alcohol production (Bose, 2023).

Major raisin producing Taluks or regions of Sangli are Tasgaon, Palus, Miraj, Atpadi, Kadegaon, Kavathe-Mahankal and Jath. Right from the process of sowing to cultivating grapes and drying raisins, grape farming provides employment to not only 10,000 families in Sangli but to a sea of migrant workers who come from other states of India. It would be no exaggeration to suggest here that it is the diverse use,

different varieties, volume and quality of grapes grown in Sangli that has played a major role in the district securing its GI tag in 2016. (Bose, 2023).

Some other crops that are grown in abundance in the district are pulses, jowar, bajra and groundnut. Apart from the production of turmeric and sugarcane which is ever increasing, Jowar and Bajra occupied nearly 60% of the gross cropped area in 2014 alongside 11% gross cropped area utilized by pulses and groundnut farmers (Government of Maharashtra, 2014).

Although there is very little scope of expanding the land under cultivation in the district because almost three quarters of Sangli is already under cropped area, the farmer welfare schemes like raising awareness about technological advancements in agriculture, distribution of high quality seeds for optimal produce and installation of pumps by the government have helped farmers raise a bumper produce over time. According to the available official data, the total production of crops increased by 7.8% in Sangli during the first five year plan enacted in between 1951 to 1956. By the time of the second five year plan, the production was 40.5% over the first five year plan. Moreover, during the same period, the area of land under irrigation had increased by 13,000 acres and the number of oil engines and electric pumps jumped 1232 in 1951 to 4496 in the next ten years (Government of Maharashtra, 2014). Additionally, the expanding network of co-operatives in Sangli is a fantastic feat in itself. As of 2014, there were over 500 credit societies, one processing society, eleven collective farming societies, a central co-operative bank with 730+ members, a co-operative lift irrigation society and one co-operative sugar mill in Sangli (Government of Maharashtra, 2014). Although the data is quite old in terms of years, it is still an important link in understanding the general state of patterns in Sangli's agricultural set-up.

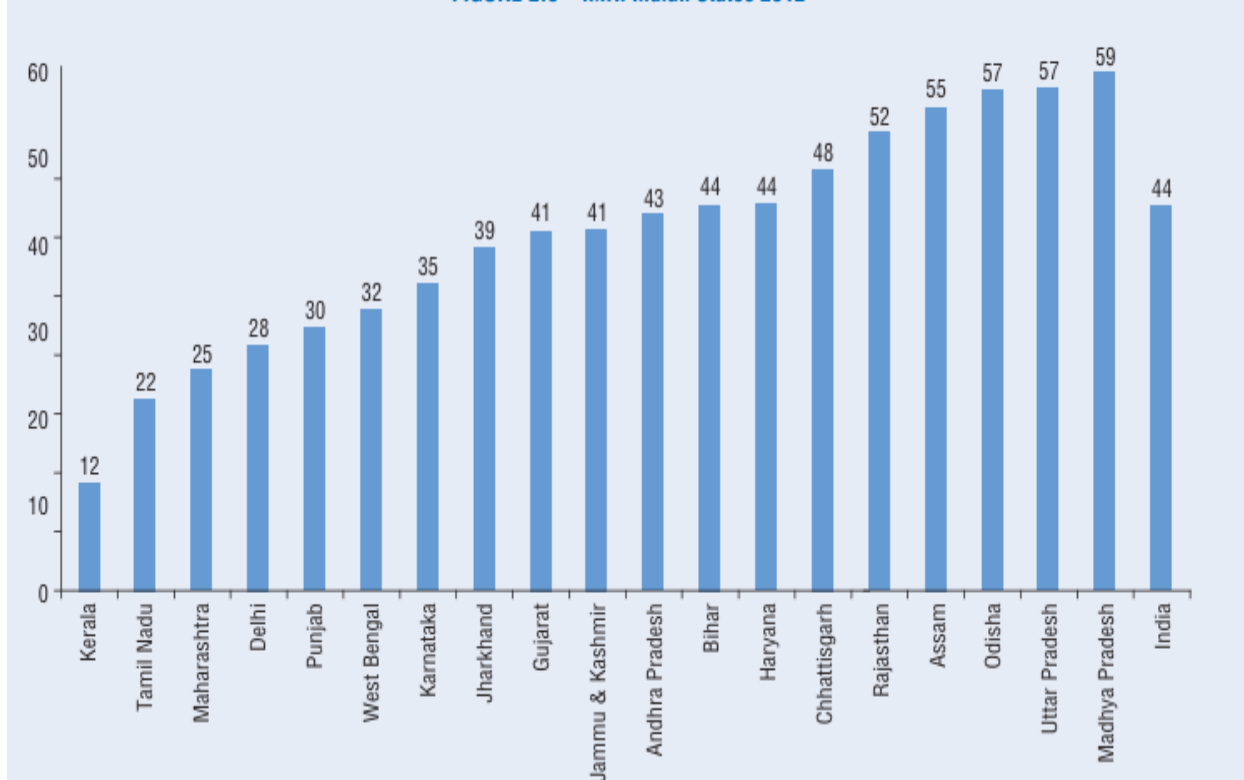
Having known the basic agricultural setup in Sangli, it now becomes important to see the most recently available trends of HDI in the district so as to see how much the agricultural prosperity in a district that runs primarily on agriculture affects human development. According to a report published in 2014, Sangli has seen a mostly positive trend in major indicators of the HDI like the literacy rate and gross enrolment ratio. From the years between 2001 and 2011, Sangli's literacy rate jumped from 76.6 to 82.6

and GER from 76.2 to 87.9 (YASHADA, 2014, p.12). Moreover, IMR in Maharashtra in 2012 was recorded at 25, significantly lower than most Indian states (p.20).

### Box 2.1 Maharashtra: Significant Improvement in IMR (as per SRS)

As far as IMR of the state is considered it is important to note that it has declined by 22 points since 2001 from 47 to 25 in 2011 (Registrar General and Census Commissioner of India 2012). In 2011, the IMR of the state was less than the country and other bigger states (except Kerala and Tamil Nadu) (see Figure 2.8).

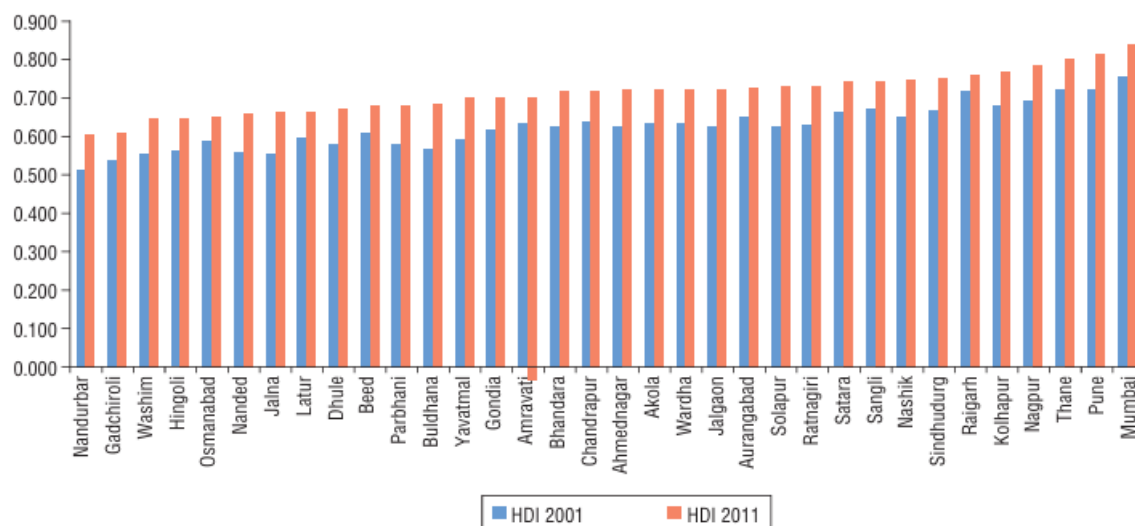
FIGURE 2.8 IMR: Indian States 2012



(p.20)

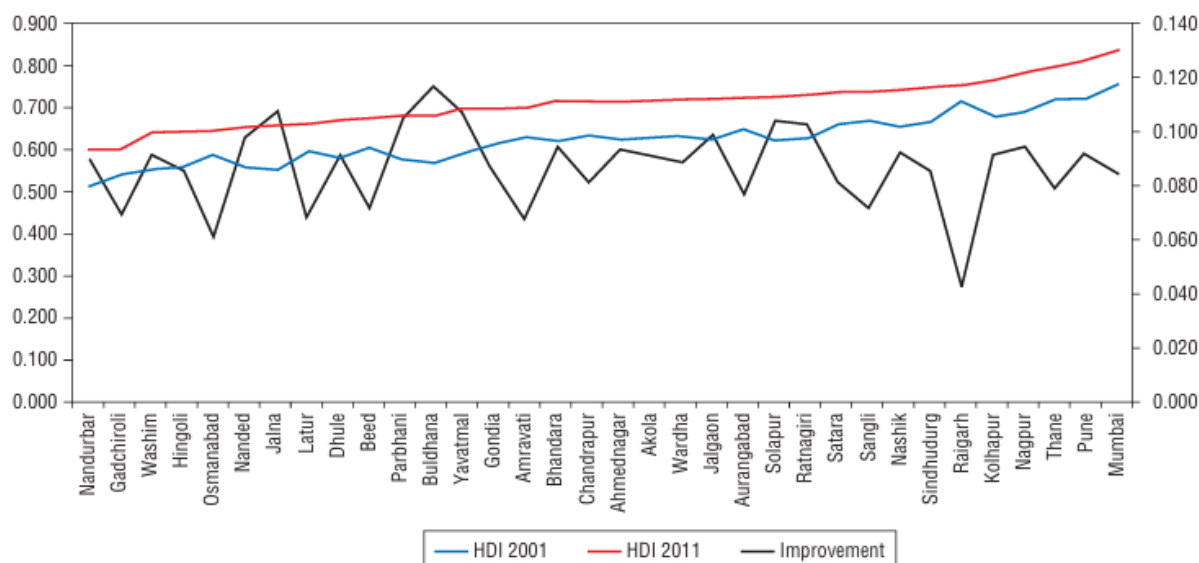
The overall HDI in the district was registered at 0.600 in 2001 and significantly increased by almost 0.100 by 2011 to become 0.700. This also puts Sangli in the list amongst the top 10 Maharashtrian districts like Mumbai, Pune, Nagpur etc that have been categorized under the category of ‘very high’ HDI (p.13). The graphs below illustrate this.

FIGURE 2.1 HDI across Districts: 2001 and 2011



(YASHADA, 2014, p.13)

FIGURE 2.3 Improvements in HDI: 2001-11

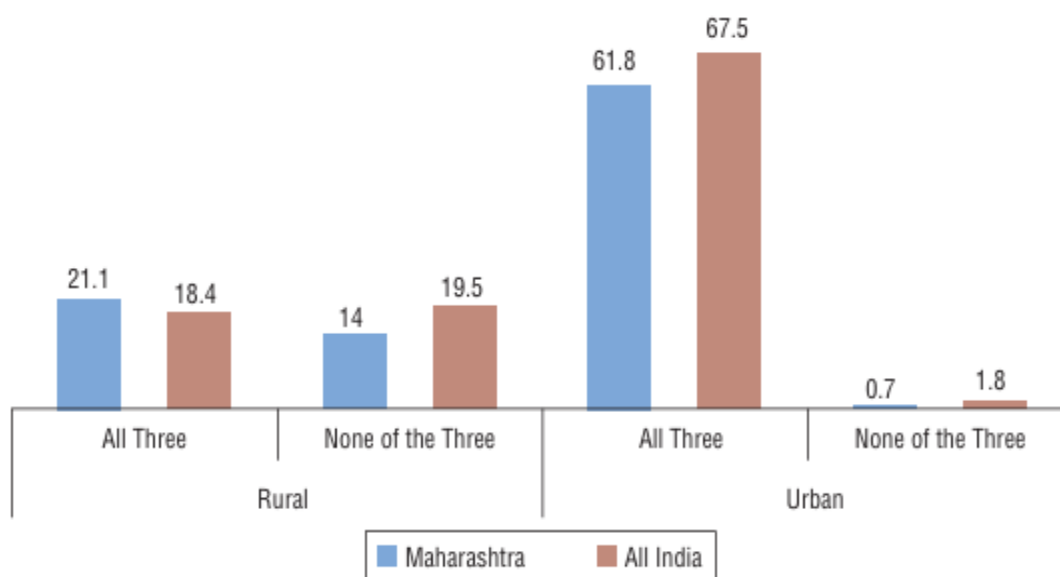


(p.15)

Cities like Mumbai, Pune and Nagpur are highly modernized and developed and for an agrarian set up like Sangli to compete with them is a remarkable feat in itself. The per capita net district domestic produce or PCNDDP also showed a huge growth, with a steep rise of almost four times from being 22,303 in 2001-02 to becoming 80,709 in 2011-12 (p.21).

When this rise in PCNDDP is seen from the perspective of the majority of district's population duly involved in agricultural activities, it definitely is an attested proof of how agricultural advancement has improved the standard of living and quality of life for people in Sangli. Apart from the factors already discussed, HDI in Sangli can also be seen from different lenses to form a more comprehensive and a clearer picture of human development in the region. According to a study by International Institute for Population Sciences (IIPS) in 2010, around 88% of children in Sangli receive full immunization at birth (YASHADA, 2014, p.90) and a substantial number of women trust and choose to access the government provided facilities for pregnancy and other childbirth related medical needs (p.102). Moreover, the living conditions and sanitation in Sangli were found to be very good as well. In 2011, it was found to be one of the least chemically infected districts in Maharashtra when water samples were tested (p.117). Around 65% of households in Sangli had an indoor latrine, 67.3% of houses had access to running water within the premises of their houses and more than 70% of households had a bathroom facility (Appendix B).

**FIGURE 6.3 Proportion of Households with Drinking Water within Their Premises, Electricity for Domestic Use and Toilets: Maharashtra and India (2008–09)**

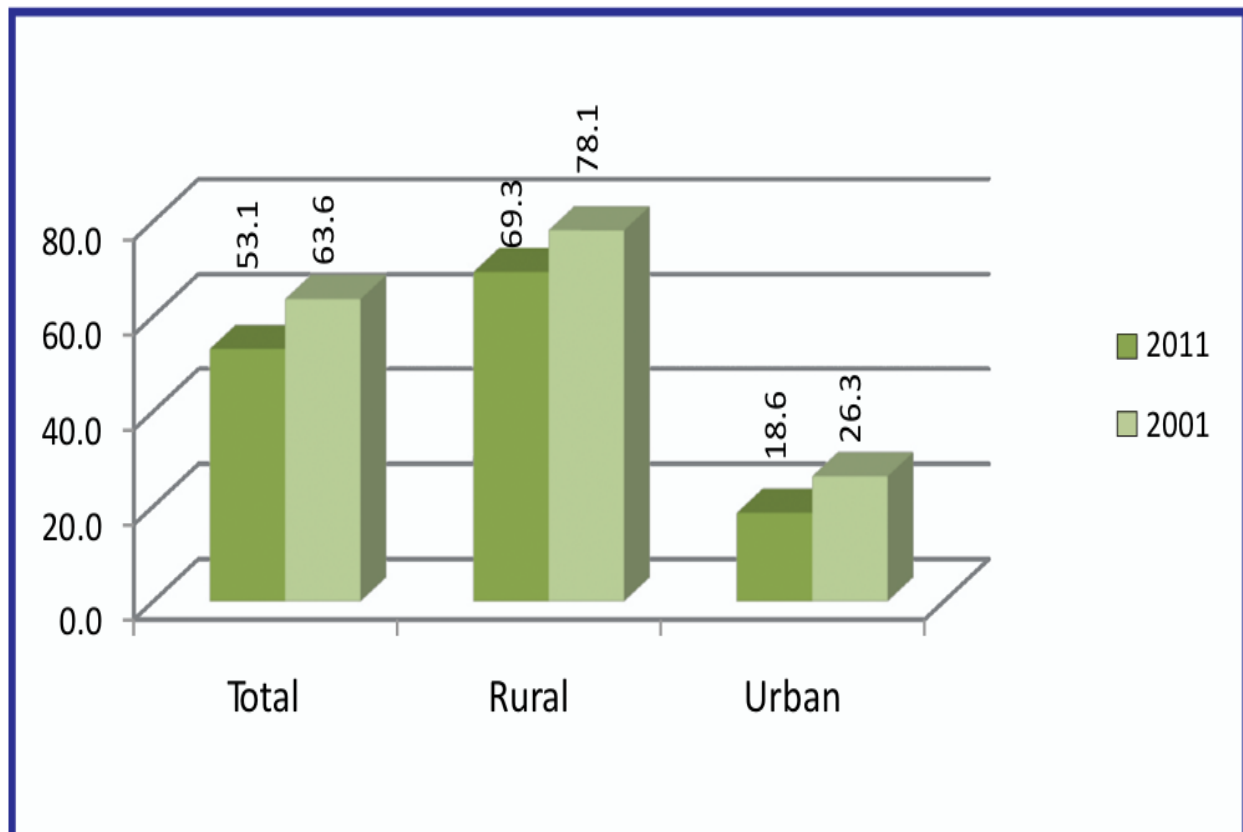


*Source:* Author's calculations based on unit level data from the 65th round of NSS.

(p.110)

These statistics are very impressive because for context, The percentage of Maharashtrian houses with a toilet in 2011 was 53.1% and Indian national percentage of houses that had a toilet in 2011 was no more than 47% (ORGI, 2011). The following pictorial representation illustrates the percentage of Indian households without a latrine.

**PERCENTAGE OF HOUSEHOLDS HAVING NO LATRINE  
INDIA, 2001-2011**



(ORGI, 2011)

When observed from a distant gaze, Sangli appears to be a rural and semi urban Indian dream, with farmlands bustling with crops, availability of all the necessities of life and prosperity among the masses. Although it does suffer from its own issues like corruption and bureaucracy, Sangli can inspire different regions in India and can definitely be adopted as a role model in terms of balance in city life and rural development. According to Numbeo, although the general crime rate in Sangli operates around 40, which



is considered a moderate level, the problem of bribery and other corrupt practices is over 80, which is very high and concerning (Numbeo, 2025). Sangli therefore, certainly offers an advice, if not a probable solution to the ever persisting problem of managing human development, urbanization and their coexistence with agriculture.

## **Conclusion**

Sangli's case can be seen as a great example of how efficiency and progress in agricultural practices can actually lead to an overall success in achieving different factors of human development. HDR 2024 has confirmed that an informed and advanced food management system can certainly assist a country in achieving a better state of human development. The report said that only 11-28% of the global population has access to food within 100 kilometers of their residence. This means that a majority of people around the world depend on high profile distribution chains for something as necessary and vital as food. The problem with this is multi faceted, including the loss of local food traditions and food distribution chain being a controlled puppet show for a handful of companies, where studies have found that only 4 companies control around 65-70% of world agro chemical sales and 3 out of those 4 companies run more than half of global seed supply. The figures are definitely concerning. Climate change is experiencing an all time high rate and food scarcity is becoming a major threat to the world. For instance, owing to the Russia- Ukraine crisis of 2022, nearly 700+ million people faced hunger related issues (UNDP, 2024, p.59). The time has come for the countries around the world to realize the importance of autonomous and indigenous food production.

Another necessary reason why the world can and should learn from agriculture based towns like Sangli is rooted in our history and is highlighted by HDR 2023/24. In 1920, Vienna saw a crisis where 25% of deaths were caused by tuberculosis. The state of nutrition and quality of life were so terrible that the times were even compared to the centuries old bubonic plague. The crisis gave birth to studies that confirmed the fact that it was certainly very crucial to understand what kind of food do the general masses get on their plates. In 1918, around 60 million peasants did not produce their own bread and hence, the

places were deprived of locally produced food, making them reliant on the supply of it. The peasants too, found themselves trapped in a vicious cycle of unemployment, undernourishment, hunger and misery. The crisis got deepend with the emergence of industrial advancements in agriculture in American and Australian continents and collectivization of agriculture by the Soviet Union in 1927 (UNDP, 2024, p.64)

Through a select few examples and instances scattered throughout this research, it now becomes clear that if more and more countries around the world step forward towards becoming self- reliant for agricultural production and distribution needs, the resulting benefits can be multi- faceted. The following part of the paragraph would conclude those benefits. Apart from fulfilling their own consumption needs, the countries can have a seasonal source of side income whereby they can enhance their exports towards countries that are unable to produce crops they can. This has to be achieved through passing of various laws that administer indigenous production and foreign export of crops, thereby establishing a direct link between agricultural laws and Human development. Additionally, this will provide help with tackling the local unemployment crisis, by forming up indigenous supply and storage facilities that will reduce the reliance on high brand foreign companies that control the process currently. Moreover, for many African countries that are majorly agrarian, already produce a variety of crops and rely on the primary sector for a large chunk of their GDPs<sup>1</sup>, the formation of specific and customized laws that put a limit on foreign intervention in agriculture alongside proper administration and running of local government organizations that govern crop cultivation and management can be a game changer. Apart from the positive upsurge in the economy, it might also mean an enhanced global position and a say in world affairs for them. Finally, through coexistence and collective uprooting of agriculture companies that work like mafia and drain poor countries, can lead to better human development, optimal use of resources, elimination of the middle man in the process and ultimately, eradication of world hunger.

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<sup>1</sup> Refer to page 8

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