

# Finding bliss in the fields: an exploration of happiness factors of Indian farmers

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*In recent years, there has been a growing interest in determining the factors that contribute to the happiness and well-being of farmers. Farmers are gradually becoming engulfed in a quagmire of distress circumstances and it is time to examine how we can make their lives better. Efforts to improve the happiness and well-being of farmers in India will not only benefit them, but also their families, their communities and the entire country. The Indian Government and policy makers have a crucial role to play in improving the happiness levels of farmers by implementing policies that are geared towards addressing the challenges faced by them. By taking a multi-faceted approach and prioritizing the needs of farmers, it is possible to make significant progress towards improving their happiness and well-being.*

**Keywords:** Farmers, happiness factor, income, indicators, policies.

INDIA is a country where agriculture is a primary activity, providing jobs for 58% of its workforce and contributing 18.8% of its total gross value added. Our farmers are the backbone of global food production, but their hard work is often met with sorrow. With every sunrise, India has witnessed 40 farmer suicides since 1995 (ref. 1). To ensure that the farmers continue providing for our national and global food security, it is crucial that we improve their happiness and well-being. Sadly, India ranks 136 out of 146 countries in the World Happiness Report (2022)<sup>2</sup>. If we can reduce the distress of our farmers, it will improve the happiness of our nation as a whole.

Happiness has been a central theme in human thought and culture for centuries. In recent years, there has been a growing interest in studying happiness and well-being, and the factors that contribute to them. While much of the research on happiness has focused on urban populations, there is a growing recognition of the importance of understanding the happiness levels of rural populations, particularly farmers, who play a critical role in feeding the world's growing population.

## The plight of Indian farmers

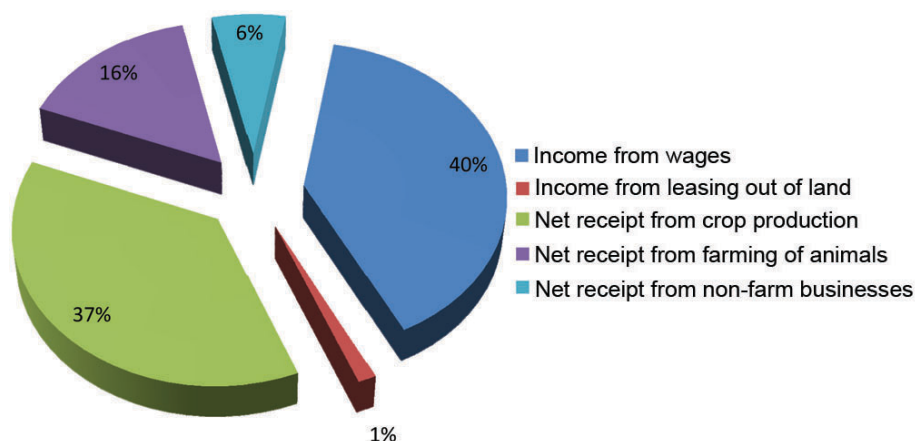
The major challenge for Indian farmers is to produce enough nutrient-rich food for the growing population of the

country while using limited land resources. Farmers bear the primary responsibility for achieving this goal; however, they are gradually getting stuck in a quagmire of distress circumstances. The major challenges are climate change and its effects on farming<sup>3,4</sup>, inadequate availability of irrigation, high cost of labour<sup>5</sup>, fragmented land holdings and ownership conflicts<sup>6</sup>, menace of wild animals<sup>7</sup> and lack of processing and value-chain infrastructure<sup>8</sup>. Agriculture is no longer a lucrative livelihood option for small and marginal farmers, forcing them to consider alternative jobs. Let's consider the sources of income of average Indian farming households according to the NSS 77th Round Report. It is clear that net receipt from crop production (37%) is less than income from wages (40%) (Figure 1). This indicates that farming households are earning more from wages than from crop production. The wage rates have increased compared to the minimum support price (MSP). The high labour cost takes the lion's share of income to input cost. This is because of the lack of availability of labour due to migration<sup>9,10</sup> and the lack of farm mechanization.

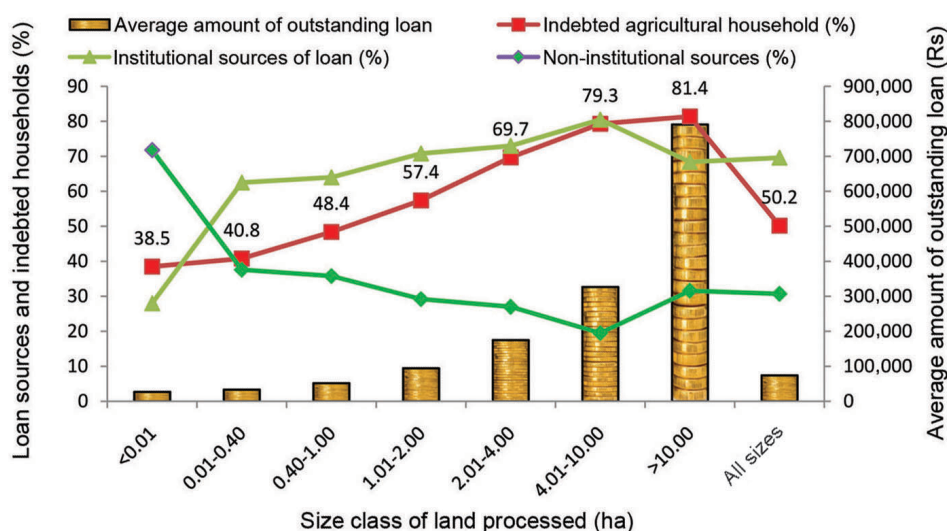
The third major source of farming households' income is animals (16%) and non-farm businesses (6%). Farm earning is mostly derived from wages and animal farming, with an average annual rise of 19.24% and 21.47% respectively, between 2012–13 and 2018–19. However, without these two sources of income, the yearly income of farm households would have declined significantly in 2018–19. The average monthly earning of Indian farmers from various sources per farm household after deducting paid-out and imputed expenditure is Rs 8337. This indicates that the daily income of farm households is only around Rs 277, which is not substantially different from the minimum pay rate of the National Employment Guarantee Scheme.

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**Figure 1.** Sources of income of average Indian farming households (source: NSS 77th Round Report; [https://mospi.gov.in/sites/default/files/publication\\_reports/Report\\_587m\\_0.pdf](https://mospi.gov.in/sites/default/files/publication_reports/Report_587m_0.pdf)).



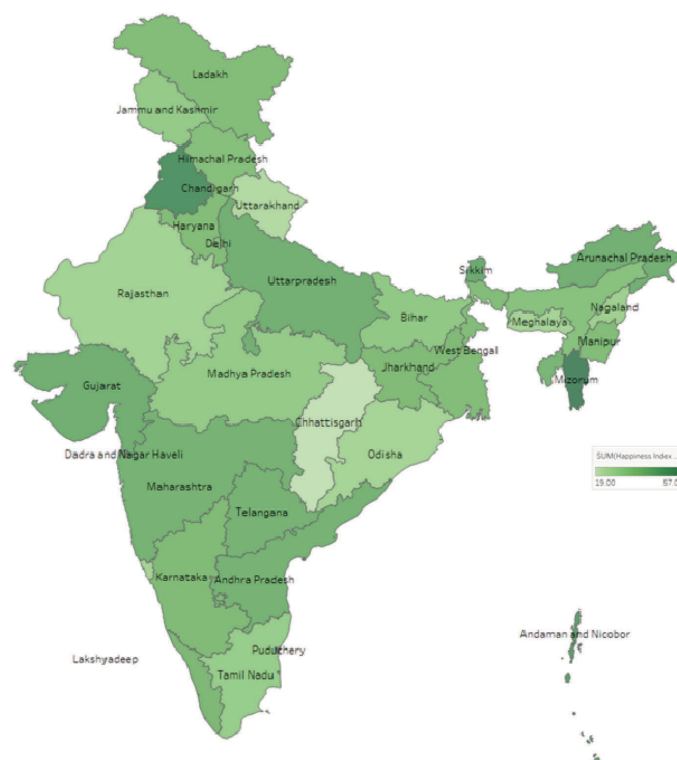
**Figure 2.** Percentage of indebted agricultural households and average amount (Rs) of outstanding loans for each size class of land possessed.

About 50.2% of agricultural households are in debt. The average debt is Rs 74,121. It is a general conception that small and marginal farmers are distressed due to less land. However, if we consider the data of indebted agricultural households, it will be clear that the large farmers (>10 ha) have Rs 7.91 lakh in average outstanding loans. With the increase in landholdings, the indebtedness of agricultural households is also increasing. This indicates that 38.5% of marginal farmers are in debt, increasing to 81.4% for large farmers. The concern is that small farmers are more inclined towards non-institutional sources of finance. They pay high-interest rates for the small amounts of loans. These push them into a loan swamp (Figure 2).

In 2020, India reported 10,677 suicides in the agricultural sector. The National Crime Records Bureau data on suicides in India included 5579 farmers/cultivators and 5098 agricultural labourers<sup>1</sup>. The states with the highest number of suicides were Maharashtra, Karnataka, Andhra Pradesh,

Chhattisgarh, Telangana and Tamil Nadu. The financial crisis, crop failure, excessive work pressure, family problems and mental stress were the major issues. If these are identified on time, they can aid in preventing suicides. Interestingly, West Bengal, Bihar, Nagaland, Tripura, Uttarakhand, Chandigarh, Delhi, Ladakh, Lakshadweep and Puducherry reported no suicides among farmers/cultivators or agricultural labourers. Except for Delhi and Chandigarh, the other states are not economically advanced, but there are other factors that are important for farmer satisfaction and happiness.

A nationwide survey conducted by the Centre for the Study of Developing Societies, New Delhi in 2014 found that a significant number of farmers (72%) enjoyed their profession. The satisfaction level among farmers varied from region to region. Farmers in central India had a higher level of satisfaction with their current situation, with 71% being satisfied. In contrast, only 35% of farmers in eastern



**Figure 3.** State happiness status in India. Note: Data from Andhra Pradesh was used as a proxy for Telangana. Source: India Happiness Report, 2020.

India expressed satisfaction with their current situation. In West Bengal, majority of the farmers (78%) had a negative view of their overall situation. This was in contrast to the neighbouring states of Maharashtra, Madhya Pradesh and Gujarat, where only 16%, 22% and 23% of farmers respectively, held a negative view regarding their situation. The states with the highest happiness scores among farmers were Mizoram, Punjab, Andaman and Nicobar Islands, Puducherry and Sikkim (Figure 3). This shows that the level of happiness among farmers can vary greatly from state to state, even within the same country.

### Factors related to happiness

India has a large agricultural sector and farmers constitute a significant portion of the population. According to the 2011 Census of India, around 50% of the country's workforce is engaged in agricultural activities. Despite their critical role in providing food and livelihood, Indian farmers often face numerous challenges and difficulties, such as low income, poor working conditions, and limited access to healthcare and education. Given these challenges, it is important to understand the factors that contribute to the happiness and well-being of Indian farmers.

Happiness is a dynamic concept with numerous associations, and it has been a subject of discussion in psychology, sociology and economics in several nations<sup>11</sup>. Happiness is a measure of life that is the ultimate aim of individuals.

It directly impacts people's mental and physical health, and a higher degree of happiness leads to a better and longer life<sup>12</sup>. According to Maslow's theory of self-actualization<sup>13</sup>, deficiency needs like psychological needs, safety needs, love and belongingness and esteem needs are important to maintain motivation among human beings. Without these, it isn't easy to motivate a person. The same theory can also be applied to Indian farmers. They also need good income and a social system to meet all their basic needs, financial security, social security, social stability, health and well-being. Table 1 (refs 14–28) provides different research-based evidence indicating the needs and related factors which affect the happiness of farmers. It starts from the basic needs to esteem and aesthetic needs. Air quality is a basic need of a person, which influences the health and welfare of a family. In rural India, air quality is not a big problem as in urban cities. Income, health, employment, etc., provide a safety net to a family and hence are categorized as safety needs in Maslow's theory. Safety needs also include insurance; crop insurance, animal insurance and family health insurance play a crucial role in ensuring the safety of rural families. Five factors, viz. technology, market, credit, information and infrastructure, are pivotal in augmenting farmers' income. An overarching factor, money, can be decisive in improving family well-being, which leads to family satisfaction and stimulates individual happiness. Therefore, enhancing farmers' income from agriculture is crucial for their happiness.

**Table 1.** Needs and related factors which affect the happiness of Indian farmers

Needs	Factors
Basic needs	Air quality <sup>14</sup>
Safety needs	Compensation satisfaction <sup>15</sup> , family income <sup>15</sup> , income <sup>16-18</sup> , health <sup>16,17,19</sup> , macro-environment (inflation, unemployment, welfare systems and public insurance) <sup>20,21</sup> , employment <sup>22</sup> , social security system <sup>23</sup>
Love and belongingness	Living in a community <sup>24</sup> , community environment <sup>25</sup>
Psychological needs	Job satisfaction <sup>15</sup> , positive mental health <sup>26</sup>
Esteem needs	Socio-economic status (power, prestige and financial position) <sup>27</sup> , advisory services <sup>28</sup>
Aesthetic needs	Environmental restoration <sup>14</sup>

Living in a community and community environment is another higher level of need. Being social by nature, humans love to live in a community. A positive, encouraging and cooperative community always enhances human efficiency through working in a group and mutually supporting one another. Community life in villages is always better for individual farmers. Thus fostering farmers' collectives like self-help groups (SHGs), cooperatives, and farmer producer organizations (FPOs) is fundamental in encouraging and empowering farmers socially and financially. In fact, the current national drive to promote FPOs should be encouraged as a movement to render dignity, besides social and economic empowerment, to farming communities.

The next level of need is psychological need, which includes job satisfaction, positive mental health, etc. Farmer satisfaction with farming as an occupation is important. Similarly, socio-economic status, recognition, awards, etc. fulfil the esteem needs of farmers.

According to Maslow<sup>13</sup>, these are often referred to as deficiency needs (D-needs), and the highest need is self-actualization. Deficiency needs arise as a result of deprivation and are considered to motivate people when they are unsatisfied. Furthermore, the motivation to meet such needs grows stronger the longer they are denied.

### Role of community and family

The role of community and family in the happiness of Indian farmers is a complex and multi-faceted issue that requires careful consideration. On the one hand, strong and supportive communities and families can provide farmers with a sense of belonging, security and purpose. On the other, the demands and challenges of agricultural work can significantly strain family relationships and community dynamics.

One of the key ways community and family can contribute to the happiness of Indian farmers is by providing them with a sense of belongingness and social connectedness. This can be achieved through community-based initiatives and programmes that unite farmers and provide opportunities to share experiences and knowledge. For example, farmer cooperatives can provide a platform for farmers to exchange ideas, work together on common goals and build supportive networks. By creating a sense of community, farmers can

feel more connected to others and more confident in their ability to overcome challenges and succeed in their work.

Family relationships can also play an important role in the happiness of Indian farmers. A strong family support network can provide farmers with emotional and financial stability, helping ease the stress and financial burden of agricultural work. In addition, supportive families can give farmers a sense of purpose and fulfilment, helping make their work more meaningful and rewarding.

However, the demands and challenges of agricultural work can also significantly strain family relationships and community dynamics. For example, long working hours, the unpredictability of crops and the stress associated with financial insecurity can make it difficult for farmers to maintain strong relationships with their families and communities. In addition, the isolation associated with agricultural work can contribute to feelings of loneliness and social disconnection, further exacerbating the challenges faced by farmers.

To address these challenges and promote happiness among Indian farmers, developing initiatives and programmes that support family relationships and community connections are important. This could include providing training and resources to help farmers manage stress and build stronger relationships with their families, as well as offering opportunities for them to participate in community-based activities and initiatives. Additionally, efforts should be made to increase the availability of support services, such as mental health resources and financial assistance, to help farmers manage the challenges associated with agricultural work.

### Enhancing happiness

A holistic approach is needed to replenish the current policy intents and initiatives for promoting the well-being and happiness of farmers. This approach should consider farmers' socio-economic status, financial potential and decision-making ability to enhance the happiness index among farmers in India. Farmers with poor coping skills must be identified and assisted. Productivity-boosting strategies must be used, including improving yields, diversifying to higher-value crops, and building value chains to cut marketing costs.

Gross National Happiness (GNH) is a unique development tool in Bhutan by policymakers<sup>29</sup>. Before new public policy initiatives are implemented in this country, the GNH Commission reviews them. For effective implementation, all policy makers for various agricultural schemes should incorporate the concept of GNH into their policies. State Governments and institutions should implement policies and classes to increase happiness in the farming society. For example, the Way to Happiness Foundation holds workshops in schools and among Delhi police officers (<https://projectheena.com>). A university in Gujarat recently launched a new certificate programme called 'Happiness Counseling' (<https://ahmedabadmirror.com/now-get-certified-in-happiness-at-gu/70884062.html>). In 2019, the Maharashtra Government considered establishing a 'Happiness Ministry' to promote happiness among residents (<https://www.newindianexpress.com/nation/2018/jul/10/maharashtra-government-contemplating-induction-of-happiness-ministry-to-encourage-positivity-1841207.html>). The Delhi Government has also begun to hold 'Happiness Periods' in Government schools, which include innovative activities to encourage children to think logically and creatively (<https://www.hindustantimes.com/delhi-news/delhi-government-to-introduce-daily-happiness-classes-in-schools/story-YBP1-cXscMYEVs3ffwXICpL.html>). These kinds of initiatives should also be promoted among the farmers of our country.

The rural energy consumption revolution has increased the likelihood of farmers' happiness level by 22.7% in China by increasing leisure activities<sup>30</sup>. Its negative impact on happiness is also significant for higher electricity expenditure, particularly for rural low-income households. It has been proposed that the rural energy consumption revolution be implemented in tandem with the national targeted poverty alleviation policy and the national pollution prevention and control policy, resulting in a multi-pronged strategy that simultaneously targets the socio-economic and environmental factors associated with farmers' happiness. Bhutan's constitution directs the state to foster conditions conducive to implementing GNH. However, translating it into reality, particularly in rural areas, is a significant challenge<sup>29</sup>. A study was conducted to identify the factors associated with the level of happiness among paddy farmer households in the Muda Agricultural Development Authority (MADA) granary area in Malaysia<sup>28</sup>. According to this study, the institution factor is the most important contributing to the happiness of paddy farmer households. The findings show that MADA's role, particularly in advisory assistance to farmers, has increased farmers' happiness in the area. The management of leisure time, ownership of financial assets and ownership of human assets all have a positive impact on paddy farmers' happiness. A study was conducted to assess the subjective well-being conditions of smallholder layer-chicken farmers in rural East Java, Indonesia<sup>31</sup>. It showed that the happiness index of these farmers was 7.28, indicating that they were 'Happy'.

Since 2012, the United Nations Sustainable Development Solutions Network has published the World Happiness Report to rank countries based on how happy their citizens perceive themselves to be. The Report is centred on two key ideas: (i) measuring happiness or life evaluation through opinion surveys and (ii) identifying key elements that influence well-being and life evaluation across countries. The rankings are determined by six factors, including GDP per capita, social support, healthy life expectancy, freedom, generosity and the absence of corruption.

The relationship between farming practices and the happiness of Indian farmers is complex and multi-dimensional. On the one hand, farming can provide a sense of purpose, fulfilment and connection to the land that can contribute to happiness. For many farmers, farming is not just an occupation but a way of life deeply rooted in their cultural identity and heritage. On the other, farming can also be a challenging and stressful profession that can take a toll on the mental and emotional well-being of farmers.

The type of farming practices used by farmers can have a significant impact on their happiness. For example, farmers who use sustainable and regenerative farming methods, such as organic farming, have been found to have higher happiness levels than those who use more conventional farming methods. This is because sustainable farming practices have numerous benefits, including improved soil health, increased crop yields, and reduced dependence on synthetic fertilizers and pesticides, all of which can contribute to a more positive and fulfilling experience for farmers.

Moreover, access to resources and technology can also play a role in the happiness of Indian farmers. Farmers with access to resources and technology that allow them to be more efficient and productive, such as irrigation systems, tractors and storage facilities are likely to be more satisfied with their work and have a higher sense of well-being. This can also help increase their income and reduce their stress levels, both of which are critical factors in the happiness of Indian farmers.

Several initiatives have been in India and other countries to enhance 'happiness among farmers' (Table 2). Analysis of these initiatives reveals that India has immense scope to improve its global standing in terms of the National Happiness Index. Despite its rapid strides with regard to economic development, India continues to be 'rural and agricultural at heart and soul'. Notwithstanding urbanization and industrialization, we need to frame innovative policies and schemes to promote 'rural and agricultural prosperity' and implement them with transparency and accountability. One such policy shift should be to regard farmers in letter and spirit as 'partners' in national development and not just as beneficiaries. Farmer-led initiatives should be encouraged as mass movements not only lend voice to their problems but also to make them a 'part of the solution to their problems'. A farmer-centric participatory drive can truly hasten this transformational process. Although efforts were made to promote some schemes like Agricultural

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**Table 2.** Techniques used to enhance happiness among farmers in different regions of the world

Technique used	Country/region	Factors of happiness	Results
Adoption of Saguna rice technique (SRT): This is a zero-till rice-based farming method that quickly rejuvenates the soil by increasing organic carbon, as well as earthworm and microbial activity. It also improves drainage, water infiltration and aerobic conditions in the rhizosphere. All these significantly increase yield at a lower cost of production. The absence of rice puddling and transplanting allows for a reduction in irrigation water, the availability of a tractor or plough, and skilled labour during a specific period of transplanting.	Maharashtra, India <sup>32</sup>	Economic growth, environmental balance, social image, physical stress relief, mental stress relief and workplace comfort.	Since 2013, SRT has been adopted by over 3000 happy and confident farmers spread across 15 districts of Maharashtra. A unique 'farmers' happiness index' survey, with a sample of 160 farmers, resulted into 8.58 happiness quotient on a 0–10 scale.
A metric that measures social concerns from the perspective of farmers should be integrated into agricultural information systems oriented toward policy evaluation to measure aspects of well-being that may affect the future of farming systems <sup>33</sup> .	European countries – The Netherlands, Hungary, Finland, Poland, Spain, Ireland, Greece, France and Germany	Working time, age of assets, financial situation of the farm and community engagement.	Significant and substantial influence on overall life satisfaction.
Implementing rural energy consumption revolution alongside the national targeted poverty alleviation policy and the national pollution prevention and control policy, resulting in a multi-pronged strategy <sup>30</sup> .	China	Socio-economic and environmental factors.	Rural energy consumption revolution increased the likelihood of farmers' happiness level by 22.7%.
Incorporation of Gross National Happiness (GNH) as a unique development tool for new public policy initiatives.	Bhutan <sup>29</sup>	Psychological well-being, health, education, time use, cultural diversity and resilience, good governance, community vitality, ecological diversity, and resilience and living standards.	A programme of social and economic change and development. The GNH cut-off has been set at 66% of the variables. People are considered happy when they have sufficiency in 66% or more of the (weighted) indicators, and are identified as extensively happy or deeply happy. In 2010, the GNH index was 0.737. It shows that 40.8% of Bhutanese people have achieved such happiness.
Increasing farmer happiness through institutional advisory assistance <sup>28</sup> .	Malaysia	Institution factor	The management of leisure time, ownership of financial and human assets all had a positive impact on paddy farmers' happiness in the Muda Agricultural Development Authority granary area in Malaysia.
Rearing of layer-chicken <sup>31</sup> .	East Java, Indonesia	Life satisfaction, subjective well-being conditions.	Smallholder layer-chicken farmers in rural East Java Province had a happiness index of 7.28, indicating that they were 'happy'.

Technology Management Agency (ATMA), the implementation remains a major concern. Similarly, Raitha Sampark Kendras (RSKs) in Karnataka and Raithu Bharosa Kendras (RBKs) in Andhra Pradesh can be reinvented as Raitha Santosha Kendras (Farmers Happiness Centres), providing a forum for healthy dialogue between farmers and development departments to mainstream the former as partners in agricultural and national development.

### Effect of Government policies

The effect of Government policies and programmes on the happiness of Indian farmers can be significant. The Indian Government has introduced several initiatives aimed at improving the lives of farmers and enhancing their well-

being. A recent policy is the Pradhan Mantri Fasal Bima Yojana (PMFBY), a crop insurance scheme aimed at reducing the financial losses suffered by farmers as a result of crop failure due to natural calamities. The scheme provides financial support to farmers in the event of crop loss, helping them mitigate the impact of unpredictable weather events, and reducing their stress and anxiety.

Another policy introduced by the Indian Government is the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) scheme, which provides financial assistance to small and marginal farmers. The scheme aims to provide income support to farmers, helping them improve their standard of living and reducing the burden of debt. By providing a regular source of income, the scheme can help reduce stress and improve the overall well-being of farmers.

The Indian Government has also introduced several programmes to improve the infrastructure and technology available to farmers. The Pradhan Mantri Gram Sadak Yojana (PMGSY) aims to provide all-weather road connectivity to rural areas, including villages and habitations, with a population of more than 500. Improved road connectivity can help farmers transport their produce more easily, reducing stress and improving their overall well-being.

Additionally, the Indian Government has introduced the National Agriculture Market (e-NAM), an electronic trading platform that connects farmers with buyers, providing a more efficient and effective market for agricultural products. By improving the marketing and sale of agricultural products, the e-NAM platform can help farmers receive a fair price for their produce, reducing their stress and improving their overall well-being.

### Conclusion and recommendations

The happiness of Indian farmers is a complex and multi-dimensional concept that is influenced by various factors, including personal, economic, social and environmental factors. The Indian Government and policymakers have a crucial role to play in improving the happiness levels of farmers by implementing policies that are geared towards addressing the challenges faced by them. Moreover, farming practices and technologies can also positively impact the happiness of farmers, as they can help increase their productivity, reduce the burden of hard manual labour, and provide better access to markets and services.

Given the importance of farmers to global food security, their happiness must be improved. Some of the recommendations that could help in this regard include:

- Improving the economic well-being of farmers by providing better access to credit, insurance and market opportunities, as well as increasing the MSP for crops.
- Providing better healthcare, education and social security for farmers and their families, including pension schemes and health insurance.
- Encouraging the adoption of modern and sustainable farming practices, including precision agriculture and water conservation techniques, to improve productivity, reduce costs and enhance the quality of life of farmers.
- Providing training and capacity-building programmes for farmers on new technologies, as well as increasing their access to information and support networks.
- Promoting community-based programmes and initiatives encouraging farmers to engage with their peers, share experiences and knowledge, and work together towards common goals.
- Addressing the issue of farmer suicides and providing them with better mental health support and counselling services.

By taking these steps, the Indian Government and policy-makers can help improve the happiness levels of farmers and ensure their continued contribution to the country's food security and economic growth.

Efforts to improve the happiness and well-being of farmers in India will benefit them, their families, their communities and the entire country. In order to achieve this goal, it will be necessary to work together and coordinate efforts across multiple sectors, including Government, non-government organizations and the private sector. By taking a multi-faceted approach and prioritizing the needs of farmers, it is possible to make significant progress towards improving their happiness and well-being. Hence, it is argued that a holistic approach to meet the physical, psychological, social and economic needs has to be put in place by the Central and State Governments and implemented correctly to usher in 'an era of ever-lasting happiness for farmers'. Specifically, policies for the farming community should be implemented, including various programmes and initiatives to improve their decision-making ability, increase creativity, build confidence and change the mindset of farmers with poor coping skills; this can make our farmers happy and productive. If our farmers are happy, the entire nation will be happy.

1. NCRB, Farmer suicides in India, 2020; [https://ncrb.gov.in/sites/default/files/adsi2020\\_Chapter-2-Suicides.pdf](https://ncrb.gov.in/sites/default/files/adsi2020_Chapter-2-Suicides.pdf) (accessed on 1 February 2023).
2. United Nations World Happiness Report, 2022; <https://worldhappiness.report/ed/2022/> (accessed on 1 February 2023).
3. Bhattacharya, A., Global climate change and its impact on agriculture. In *Changing Climate and Resource Use Efficiency in Plants*, Academic Press, Cambridge, MA, USA, 2019, pp. 1–50.
4. Mukherjee, A., Prioritization of problems in integrated agriculture: a case of Rampur village in sub humid region of eastern India. *Indian Res. J. Extens. Educ.*, 2016, **15**(1), 53–59.
5. Gunabhadra, A., Agricultural labour shortage: an abysmal to agriculture in north eastern Karnataka. *Econ. Aff.*, 2017, **62**(4), 295086.
6. Mukherjee, A., Singh, P., Ray, M., Satyapriya and Burman, R. R., Enhancing farmers' income through farmers' producers companies in India: status and roadmap. *Indian J. Agric. Sci.*, 2018, **88**, 1151–1161.
7. Mukherjee, A. *et al.*, Climate change risk perception, adaptation and mitigation strategy: an extension outlook in mountain Himalaya. In *Conservation Agriculture: An Approach to Combat Climate Change in Indian Himalaya*, Springer, Singapore, 2016, pp. 257–292; [https://doi.org/10.1007/978-981-10-2558-7\\_10](https://doi.org/10.1007/978-981-10-2558-7_10)
8. Somashekhar, I. C., Raju, J. K. and Patil, H., Agriculture supply chain management: a scenario in India. *Res. J. Soc. Sci. Manage.*, 2014, **4**(7), 89–99.
9. Chandra, N., Roy, M. L., Mukherjee, A., Jethi, R. and Joshi, K., A study of migration pattern in Kumaun Hills and associated socio-economic factors. *J. Community Mobil. Sustain. Dev.*, 2018, **13**(1), 107–112.
10. Kumar, U., Raman, R. K., Kumar, A., Singh, D. K., Mukherjee, A., Singh, J. and Bhatt, B. P., Return migration of labours in Bihar due to COVID-19: status and strategies of deployment in agricultural sector. *J. Community Mobil. Sustain. Dev.*, 2020, **15**(1), 192–200.
11. Oswald, A. J. and Powdthavee, N., Does happiness adapt? A longitudinal study of disability with implications for economists and judges. *J. Public Econ.*, 2008, **92**(5–6), 1061–1077.

## GENERAL ARTICLES

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12. Cohn, M. A., Fredrickson, B. L., Brown, S. L., Mikels, J. A. and Conway, A. M., Happiness unpacked: positive emotions increase life satisfaction by building resilience. *Emotion*, 2009, **9**(3), 361.
13. Maslow, A. H., A theory of human motivation. *Psychol. Rev.*, 1943, **50**(4), 370.
14. Zhang, X., Zhang, X. and Chen, X., Valuing air quality using happiness data: the case of China. *Ecol. Econ.*, 2017, **137**, 29–36.
15. Tong, W., Zhu, L. and Lo, K., Livelihood adaptation and life satisfaction among land-lost farmers: critiquing China's urbanisation-driven land appropriation. *Bull. Geogr. Soc. Econ. Ser.*, 2019, **46**(46), 149–161.
16. Rodríguez-Pose, A. and Von Berlepsch, V., Social capital and individual happiness in Europe. *J. Happiness Stud.*, 2014, **15**, 357–386.
17. Liu, Z. and Shang, Q., Individual well-being in urban China: the role of income expectations. *China Econ. Rev.*, 2012, **23**(4), 833–849.
18. Wang, X., Jia, X., Zhu, M. and Chen, J., Linking health states to subjective well-being: an empirical study of 5854 rural residents in China. *Public Health*, 2015, **129**(6), 655–666.
19. Tella, R. D., MacCulloch, R. J. and Oswald, A. J., The macroeconomics of happiness. *Rev. Econ. Stat.*, 2003, **85**(4), 809–827.
20. Wolfers, J., Is business cycle volatility costly? Evidence from surveys of subjective well-being. *Int. Financ.*, 2003, **6**(1), 1–26.
21. Tran, N. L. T., Wassmer, R. W. and Lascher, E. L., The health insurance and life satisfaction connection. *J. Happiness Stud.*, 2017, **18**, 409–426.
22. Chen, Y. H., Lee, W. C. and Tseng, K. W., Differentiation research on employee satisfaction and happiness for European invested and local Chinese companies. *Procedia – Soc. Behav. Sci.*, 2012, **57**, 549–554.
23. Qi, D. and Wu, Y., Does welfare stigma exist in China? Policy evaluation of the Minimum Living Security System on recipients' psychological health and wellbeing. *Soc. Sci. Med.*, 2018, **205**, 26–36.
24. Luchesi, B. M., de Oliveira, N. A., de Morais, D., de Paula Pessoa, R. M., Pavarini, S. C. I. and Chagas, M. H. N., Factors associated with happiness in the elderly persons living in the community. *Arch. Gerontol. Geriatr.*, 2018, **74**, 83–87.
25. Cheng, Z. and Smyth, R., Crime victimization, neighborhood safety and happiness in China. *Econ. Model.*, 2015, **51**, 424–435.
26. Bieda, A., Hirschfeld, G., Schönfeld, P., Brailovskaia, J., Lin, M. and Margraf, J., Happiness, life satisfaction and positive mental health: investigating reciprocal effects over four years in a Chinese student sample. *J. Res. Pers.*, 2019, **78**, 198–209.
27. Oakes, J. M. and Rossi, P. H., The measurement of SES in health research: current practice and steps toward a new approach. *Soc. Sci. Med.*, 2003, **56**(4), 769–784.
28. Kamaruddin, R., Ali, J. and Saad, N. M., Happiness and its influencing factors among paddy farmers in Granary Area of Mada. *World Appl. Sci. J.*, 2013, **28**(13), 91–99.
29. Ura, K. and Galay, K., Gross National Happiness and Development: Proceedings of the First Seminar on Operationalisation of Gross National Happiness. Centre for Bhutan Studies, Thimphu, Bhutan, 2004.
30. Xu, Z. and Ge, R., The impact of energy consumption revolution on farmers' happiness: an empirical analysis from China. *Front. Public Health*, 2022, **10**, 93.
31. Sutawi, S., Karmiyati, D. and Iswatiningsih, D., The happiness of smallholder layer-chicken farmers in Rural East Java, Indonesia. *Trop. Anim. Sci. J.*, 2020, **43**(3), 282–290.
32. Bhadsavle, C. H., Towards a sustainable tomorrow through conservation agriculture. *Indian J. Agric. Mark.*, 2019, **33**(3s), 144–145.
33. Herrera Sabillon, B., Gerster-Bentaya, M. and Knierim, A., Measuring farmers' well-being: influence of farm-level factors on satisfaction with work and quality of life. *J. Agric. Econ.*, 2022, **73**(2), 452–471.

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