

N-Cycle and Organic Food: Concept of Modern Township Community Farming for Holistic Society

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Dear Readers

The contemporary urban life style of humans includes a multistorey township culture with exclusive area earmarked for common parks and community space. As per rules, around 15% of the land area is to be left for common purpose. However, it may vary from state to state. The township is governed through its society generally called as Resident's Welfare Association (RWA). The maintenance of common facilities and area is done through the contributions of the residents. This article presents a new concept of Modern Township Community Farming (MTCF) utilizing the common green area for organic foods.¹ The MTCF is an eco-friendly approach where vegetables, fruits and flowers of resident's need can be grown without using pesticides and nitrogenous-phosphorous synthetic fertilizers. Needless to describe that the pesticides and synthetic fertilizers have severe long term health effects. Therefore, the MTCF will be carried out only by using compost which will be a healthier and sustainable option. In many communities it is practiced even today. The movement of growing greens in urban areas is not new. In industrialised areas in Europe, it was developed in the 19th century. There is a growing interest in having small plots in urban areas in Europe today.² However, the present article emphasises on farming using common land of the resident's community. The concept may work as 'Cillage' (a village in city). The community farming allows people to go to the fields and do some interculture activities which take care of health in a holistic manner. Some of the multiple advantages of MTCF are mentioned below-


Better Utilization of Land

The agricultural land area is shrinking continuously due to urbanization. The common land areas will offer a unique possibility for efficient production of vegetables, flowers etc., which often need the intense care that is difficult to achieve in large scale farming. Green cover of land is considered as energy rich ecosystem.

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Production of Organic Food

Presently, most of the foods are grown using synthetic fertilizers and pesticides which have been reported having severe health effects including their carcinogenic effect.³⁻⁵ The use of fertilizers is growing worldwide. Rate of urea use in agriculture is estimated as 9.2% per year.⁶ In India, the consumption of urea has reached to 16.8 Tg for the year 2012 as compared to the consumption of 1 Tg in 1960s.⁷ Over exploitation of atmospheric nitrogen is creating nitrogen imbalance and N cycle modifications.⁸⁻⁹ Also, the use of fertilizers and pesticides impacts the soils and water raising the concern of food quality. However, when cities are getting cleaner with respect to pollution (lead has disappeared, shift from gasoline/diesel to LNG/CNG/ electricity), the risk for contaminated food is reduced. Both the problems of quality and the land availability as mentioned above force us to find out feasible alternative. MTCF may provide solution to both these problems. By utilizing common land area earmarked as green cover in the society, organic vegetables, major grains, fruits and flowers can be grown by composting methods at a community scale. Use of organic fertilizers is safe.¹⁰ People are attracted towards organic foods due to their quality. The present organic food market has 69.8 million hectares land worldwide as compared to 11 million hectares in 1999.¹¹ The organic domestic waste can be used for making composting purpose which will reduce the problem of municipality solid wastes disposal to some extent.

Social Benefits

In general, society is a people-to-people interactions. Such interaction is missing in the present social life. Unlike previous century, the present era is going to witness much more individual-centric life style and hence, the MTCF may provide an opportunity of interactions to the residents during meetings at the time of different farming activities. This will not only improve social harmony but also an innovative social engineering.

Economic Benefits

The vegetables, fruits and flowers obtained as the farming products can be bought by the residents. Hence, instead of spending money outside, purchasing from own shop may be a model of mini-circular economy which will be helpful in strengthening the financial conditions of the society. Moreover, the Resident's Welfare Associations (RWAs) can increase its income by selling the excess commodity items in the outside market which will further strengthen the infrastructure of the society. Also, if we eat healthy food, we save money spent on medicines.

Health and Wellbeing Benefits

Engagement in agricultural fields can be considered a holistic way of exercise having several positive points such as fitness of physical, mental and social aspects of an individual resulting in a healthy society. Such idea of fitness is lacking in the present life style. Presently, we go to gym for only for physical fitness purpose but the MTCF is a multidimensional activity resulting in overall fitness. Young children may also be benefited by working in the MTCF activities with their parents which will help in their all-round development. The MTCF outdoor interactions and engagements may help in evading memory loss in senior citizens. Also, the plantation of important medicinal plants may provide good quality herbs.

Environmental and Climate Benefits

The soils will be conserved during farming. Instead of synthetic fertilizer, composting will provide organic foods for which people are crazy today. Green coverage of the soil is considered as environmentally rich system and they are also improving urban climate. It will add to the green city concept encouraging people to opt recycling of wastes, bicycle use, and good quality water. The top green cities of the world take care of environment through the use of renewable energy, carbon neutral activities, recycling of grey water etc. Ploughed fields will reduce water run-off and allow more water percolation during rainy season which will help in efficient underground water recharging. The agricultural land has more richness of biodiversity than any barren land or a grass land.

Educational Benefits

It is a fact that the brain of a child is best developed during schooling. If a child gets exposure to a practical lesson of plants, soil and water while doing community farming with his/her parents, this will make him extra capable of understanding nature. My own experience indicates that working closely with the nature and agriculture during growing age increases research interests of a child. They would practically be able to understand different types of seeds (pulses, grains, spices etc.) which are ingredients of their daily food, how seeds germinate, how plants grow, when and what types of fertilizers are used and the process of harvesting etc. By doing so, practical knowledge of environment is gathered which makes you environment lover. Community farming gives impeccable tips of several environmental aspects which cannot probably be learnt from books.

Spiritual Benefits

Community engagements are significant lessons for learning the meaning of philosophy of life. When one dedicates in multifold activity with full concentration, it adds to holistic outlook. The relationship of humanity and nature is understood in a real manner. It inculcates a habit of cooperation and sacrifice broadening the spiritual attitude of an individual.

Considering the above benefits of the MTCF, the trails can be made on pilot scale. New provisions of mandatory community farming need to be introduced in the society act regulating RWAs for major township projects. Some RWA related issues such as security, responsibilities and remuneration to the staff need to be discussed. During discussions, if RWAs find it difficult, another body may be introduced to handle the MTCF. Structure of vegetables and foods outlets in the society needs to be formulated. It is anticipated that the demand of electricity and water for farming will be increased which needs to be discussed during policy formulation. Mandatory requirements of minimum area and suitable districts can be decided through due deliberations. Accordingly, an integrated policy can be adopted on MTCF globally. Such idea of holistic environment would help in achieving at least 11 of the UN sustainable development goals easily. The approach would also help in climate change mitigation objectives.

References

1. Kulshrestha U. 2021. Modern Township Community Farming. Concept Note dated July 31, 2021.
2. Grennfelt P. 2021. Detailed comments on 'Concept of Modern Township Community Farming' by U C Kulshrestha, Personal communication, dated August 3, 2021.
3. Aneja VP, Schlesinger WH, Erismann JW, *et al.* 2012. Reactive nitrogen emissions from crop and livestock farming in India. *Atmospheric environment* 47:92-103.
4. Lin W., Lin M., Zhou H., Wu H., Li Z., and Lin W. 2019. The effects of chemical and organic fertilizer usage on rhizosphere soil in tea orchards. *PLoS One*. 2019; 14(5): e0217018. doi: 10.1371/journal.pone.0217018.
5. Paharvi H.N., Rafiya L., Rashid S., Nisar B., Kamili A. N. Chemical Fertilizers and Their Impact on Soil Health, Microbiota and Biofertilizers, Vol 2 pp 1-20.
6. Mohamed A. Hassaan Ahmed El Nemr. 2020. Pesticides pollution: Classifications, human health impact, extraction and treatment techniques. *The Egyptian Journal of Aquatic Research*, Volume 46, Issue 3, September 2020, Pages 207-220
7. FAOSATAT: Food and Agriculture Organization of the United Nations. 2015. Food and Agriculture Database (Food, Agriculture Organ, UN, Rome).
8. Galloway, J.N., Cowling, E.B., 2002. Reactive nitrogen and the world: 200 years of change. *Ambio* 31, 64–71
9. Sutton M. A., Reis S., Billen G., Cellier P., Erismann J. W., Mosier A. R., Nemitz E., *et al.* 2012. Nitrogen & Global Change. *Biogeosciences*, 9, 1691–1693.
10. Lin W, Lin M, Zhou H, Wu H, Li Z, Lin W (2019) The effects of chemical and organic fertilizer usage

- on rhizosphere soil in tea orchards. PLoS ONE 14(5): e0217018. <https://doi.org/10.1371/journal.pone.0217018>
11. Willer H. and Lernoud J. 2019. The World of Organic Agriculture Statistics and Emerging Trends 2019. Research Institute of Organic Agriculture FiBL. <https://orgprints.org/id/eprint/37018/1/willer-lernoud-2019-world-of-organic-low.pdf>. Retrieved on August 15, 2021.