What is ZBNF? Discuss concerns raised on its efficacy. Provide various approaches to balance the need for agricultural productivity and environmental conservation. (250 Words)

ZBNF which literally means no additional investment, is a natural farming technique that uses biological pesticides, fertilizers and nutrients instead of chemical-based nutrients. Farmers use earthworms, cow dung, urine, plants, human excreta and such biological fertilizers for crop production. It was propounded by Subhash Palekar.

Benefits--

Reduces farmer investment

Increases water holding capacity, porosity of soil

Increases microbial content, activity and nutrient of the soil

Helps in in cutting greenhouse gases by reducing use of chemical fertilizers and pesticides

Make use of waste products like dung cow urine etc

Concerns--

This methodology has not been tested on large scale.

It might reduce productivity to a large extent taking India back to ship to mouth stage.

The content of nitrogen, phosphate and potash in cow dung and urine etc. is 3% against 46% in urea, 2% against 46% in DAP and 1% against 60% in MOP respectively.

Cost is also incurred on animal husbandry and related activities. So it is not zero budget.

Other approaches--

Materials used in ZBNF can be used to supplement chemical fertilizers rather than supplanting them.

Organic farming where vermi compost,bio fertilizer, biopesticides are used.

Techniques such as conservation tillage, trash mulching, green manuring(Dhaincha) etc can be used.

Rationalization of subsidy on urea,Neem coated Urea can help in cutting down excessive use of Urea and its diversion.

Techniques like system of rice (SRI) uses less water and thus reduces generation of methane from agriculture.

Conclusion

ICAR must do research on large scale before Government commit to such a program given that we have target of SDG 2 of Zero Hunger and double farmer's income by 2022.