1. Agriculture occupies a fundamentally important position in our economy and it is time for the sector to take another great leap forward. This will be possible with a clear recognition of the many existing inter-linkages and a clear roadmap to enhance productivity, profitability, sustainability and competitiveness of the agriculture sector in India, with special reference to rainfed farming. A business-as-usual approach would not suffice to meet these challenges. A new "farmer centric-industry driven-knowledge based" strategy may bring about desired results. Need of the hour is to identify doable programmes and implement them in a time bound manner.

2. The rainfed areas which is 60 percent of the cultivated area in India contributes 44 percent of food production in the country that includes 85 to 95 percent of coarse cereals, 89 percent pulses, 80 percent oil seeds, 65 percent cotton and 45 percent rice. It supports about 40 percent of the human population, mostly belonging to the poorer sections of society and also supports nearly 60 percent of the livestock population. Therefore, urgent attention to dryland farming is warranted.

3. The approach will have to change from one where the farmer is viewed as a "tiller", to one where we look at the farmer as an agri-preneur who is eager to look at new forms of engagement with other stakeholders, to enhance productivity and profitability from agriculture. The inputs of knowledge and scientific research, access to markets, credit support and insurance coverage and management techniques for effective utilization of various resources are essential components for running a successful business operation. Linking Industry and the farmer is very much a viable option:

4. For farmer-industry partnership, development of some basic "models" to bring farmers into partnership arrangements with SME's and the corporate sector is necessary. The farmer-industry partnership can include crop specific and region specific models by making farmers associations, shareholders or co-operatives or organizing farmers into primary producer bodies, or any other desirable and viable model between farmers and industries. Also, these agreements should, on one hand, safeguard the ownership of land of the farmer and, on the other hand, ensure tenure security during the agreement period for the industrial establishment. This would create a conducive environment for the establishment of a viable industry - farmer partnership.

5. Knowledge and knowledge management have to be leveraged effectively for the benefit of the farming community. Results from agricultural research are sometimes too academic to guide intermediary organizations and extension agencies. If that is the case, farmers do not gain anything, as knowledge is not being transferred to them in an understandable and doable form. Therefore, there is a need to start programmes that create or reinforce partnerships between intermediary organizations and research institutes, to produce accessible content in local languages and, at the appropriate technical level. The emphasis has to shift from physical inputs to knowledge inputs.

6. Appropriate technologies suitable for adoption in rainfed areas in different aspects ranging from conservation agriculture, ground water sharing for demand management, solar powered water-lifting devices, pest management etc. have been developed by ICAR. Much needs to be done to empower the farmers with knowledge for adoption of these technologies on a wider scale. Traditional knowledge and technologies available with the farmers at grass root level may also be developed and promoted.

7. Schemes like the Mahatma Gandhi National Rural Employment Guarantee Act have had a major impact in rural India. It has opened up many opportunities for work and employment, which is very important. Its further utilization for agriculture needs to be looked at, in a deeper way, to see how to maximize the potential of this scheme, for rural development and agricultural
operations, in the context of the emerging scenario of farm labour shortages and food security.

8. Even with full development of water resources in the Country, it is projected that about 45-50% of net sown area will always remain rainfed. While the Green revolution by-passed rainfed areas, the productivity growth is declining in irrigated agriculture, which is a matter of concern for sustaining and augmenting food grain production in the country in coming years. Vast potential of rainfed agriculture for contributing to food and livelihood security needs to be harnessed. The coarse cereals are main crops of rainfed areas and included in the food security bill to bridge the gap in demand and procurement for ensuring food supplies. There is a wide yield gap in the potential and actual productivity of most of the crops in rainfed region ranging from 90 to 201%. Bridging of this yield gap should receive priority in addressing the backwardness of rainfed areas. The Eastern region holds considerable potential for enhancing food grain production in the country and a focused priority approach for agricultural development in this region is called for. Rainfed farming should be planned in Mission Mode with definite role of NRRA.

9. Livestock production systems in rainfed areas, especially in dryland agriculture play a significant role as traditional safety net system against droughts. Processing and diversification of livestock products and efficient marketing is lacking. Effective crop-livestock-trees integration needs to be developed and supported.

10. The major challenges for livestock development and integration in rainfed areas are large number of non-descript animals with low productivity, high incidence of diseases, inadequate veterinary support, lack of extension services and low investments in the sector. Growth in milk sector has generated increased employment opportunities, greater involvement of women and higher income generation. But it is necessary to know as to whether the enhanced income is going to women folk in villages who take care of rearing cows and buffaloes. Goat and sheep rearing hold considerable scope in dryland farming and these enterprises provide adequate safety net in case of crop failures. However, Fishery sector might not be of much relevance in dryland areas due to scarcity of water. However, ornamental fish cultivation, limited fish production in seasonal water bodies and integrated fish production systems could be beneficially harnessed. For sustainable development and integration of livestock in rainfed areas there is a need for focusing on animal health along with breeding programmes. Product diversification, processing, value addition and efficient marketing infrastructure also need priority attention.

11. Higher investments in rainfed areas are called for along with micro-level and disaggregated land use planning. Convergence with MNREGA and active involvement of corporate sector for development of rainfed areas is essential. Incentives to attract private investment in farm sector are required.

12. Solar and wind farming was advocated to supplement farm income in dryland areas. Policy initiatives are required to promote them, on a fast track.

13. The approach for sustainable agriculture in rainfed areas should address effectively, a holistic and interlinked dimensions ranging from improved farm practices, improved seeds, livelihood diversification, pest management, market linkages etc. Functional dimensions of Research and Development, technology, infrastructure, capacity building etc. need to be developed on a constant basis.

14. The Rashtriya Krishi Vikas Yojana (RKVY) while providing desired level of flexibility to the states to adopt need based interventions in agriculture and allied sectors, also holds considerable promise in bringing much needed convergence amongst various activities / departments at the Panchayat/ Block level. The introduction of Comprehensive District Agricultural Plan (CDAP) is an effective tool for convergence of developmental activities of agriculture and allied sectors at the District level. A unified framework for planning, design and management in watershed management programme is desirable.
15. Promotion of food processing is critical for rainfed agriculture. The major challenges are supply chain infrastructure and institutional gaps, inadequate link between production and processing, seasonality of operations, low capacity utilization and lack of product development and innovation. Forging of a healthy farmer-industry partnership would ensure assured market at pre-determined prices, increased investment in technology and inputs, increased productivity and returns to farmers. Coarse cereals, which are predominant in rainfed areas, are increasingly considered critical to nutritional security. Technological innovations in processing of these coarse cereals may hold considerable business opportunities. Multi grain food products are gaining importance and major food processors are already in this sector with a range of multi grain products. The increase in area under maize cultivation is mainly attributed to huge demand for processing by starch manufacturers. Oil seeds, which are also predominant in rainfed areas, hold high business potential which needs to be capitalized through farmer-industry partnership.

16. While there was encouraging response from private sector for technology and infrastructure development schemes, the involvement of states was less than expected. The guiding principles for 12th Plan would essentially be to orient the schemes for ‘inclusive growth’ and ‘food security’ while providing more flexibility and freedom to the States. The focus areas during 12th Plan would be (a) National Mission on Food Processing (b) Infrastructure development (c) Institutional building, innovation and (d) Food safety and skill development. The national Mission on Food Processing is to be implemented as a centrally sponsored programme and is expected to provide freedom and flexibility to States.

17. Development of infrastructural facilities for agricultural produce and creating appropriate policies and procurement systems will help in better price realization by farmers for their produce. Infrastructure facility for agriculture produce includes link roads, spot market, warehousing and cold storage facilities, material handling and storage infrastructure. Besides, it also includes credit linkages and insurance facilities and adequate forward and backward linkages. The rural market infrastructures are poorly developed. With development of scientifically developed storage facilities with warehousing receipts pledging facilities could ensure better price realization to the farmers. It was informed that with the setting up of the Warehousing Development & Regulatory Authority (WDRA) in 2010, the negotiable Warehouse Receipts issued by Warehousemen have become fully negotiable instruments and can be used by farmers / depositors / traders for trading purposes in Commodity Spot Markets. However, the system is yet to fully stabilize.

18. Even though MSP has increased for all the commodities, more so for coarse cereals, pulses and oil seeds, there has been no proper procurement system. Presently, there is no well-developed structured system for procurement other than rice and wheat.

19. Panchayati Raj Institutions (PRIs) have a definite role in development of agriculture sector especially in rainfed areas. States have to devolve powers to enable Panchayats to function as institutions of self-government and prepare plans and implement schemes for socio-economic development. Along with devolution of powers and functions to PRIs, it is essential for simultaneous devolution of funds and functionaries also. It is also necessary for decentralizing the planning process with bottom-up approach with plans being initiated from the Gram Sabha level, instead of the top-down approach, which is normally being practiced at present. Agricultural development requires a range of initiatives involving technology, marketing, provision of inputs, credit, people’s participation etc. and PRIs can be the platform for convergence of these activities. PRIs can reduce administrative costs including those on Capacity Building, IEC etc. The priority need is for providing technical support and building up the capacity of PRIs. Technical support institutions need to be developed at Block level and some technical support be provided at Gram Panchayat level. It would be desirable to have Village Plans prepared and the District Plans have to be realistic that truly reflects components of village plans.

20. The availability of water is limited and the way out is for reduced demand through efficient use of water. It is imperative, especially in the context of dry lands for enhancing water use efficiency through reduction of conveyance losses and recycling/reuse of water. Lining of canal systems, piped supply for minor courses would enable in reducing conveyance losses. Watershed programmes, farm ponds, artificial recharge etc. would go a long way for water
conservation in rainfed areas. In rainfed areas there is a need for maximizing the use of ‘green water’ over ‘blue water’. The ‘National Water Mission’ aims at conservation of water, minimizing wastage and ensuring its more equitable distribution both across and within States through integrated water resources development and management and increasing the water use efficiency at least by 20%. Desalinization technology may also be looked into as a long-term solution.

21. The main challenges in Agriculture financing are access to credit to all farmers, flexibility in availing need-based credit facilities - (Working capital and Term Loans), inadequate warehousing, etc. In rainfed areas dominated by small and marginal farmers and characterized by increased frequency of crop failures, easy access to credit and simplified debt repayment would go a long way in mitigating the farmers’ distress. Promotion of SHGs, which are of much relevance to rainfed agriculture, requires support of an organization to continuously guide the members of the Group initially and then link them up to the bank. NGOs have a vital role to play in this activity.

22. Only 5% of the nearly 6 lakh villages in the country have Bank branches where as, RBI guidelines mandate banks to open 25% of their new branches in rural areas. In the under-banked districts, Banks have been advised to open branches in larger habitations of 5000 and above by September 2012. Government has also adopted the technology-based approach through Business Correspondents models for providing service to more than 73,000 villages having a population of 2,000 or more. Bank branches and Business Correspondents are to be allocated service area taking Gram Panchayat(s) as unit. The Regional Rural Bank (RRBs) are also providing vital service credits. For addressing the risk mitigation, the Interest Subvention scheme has been introduced wherein short-term crop loans are provided at 7% interest up to Rs.3.0 lakh and the existing rate of subvention for prompt repayment is 3%. The Rural warehousing scheme is also being promoted wherein a corpus fund of Rs.2000 crore is earmarked for this activity. As a part of risk mitigation strategies, during natural calamities restructuring of loans is being done as per RBI guidelines.

23. As Statutory Support for Farmer – Industry Participation, the most viable model in rainfed areas was establishment of Producer Companies which have several distinct advantages. Establishment of Producer Companies (PCs), which combine characters of Cooperatives with features of private limited companies was facilitated by the amendment in Part XI A (2002) of Companies Act. So far, 279 Producer Companies have been established with about 2 lakh farmers as shareholders. The Small Farmers Agri-Business Consortium (SFABC) of the Ministry of Agriculture has meaningful interface providing much needed linkage with Ministry of Agriculture. However, there are some issues like provision of start-up and working capital, effective market linkages and involvement of private sector agencies, which need to be addressed before the model of Producer Companies is taken to the next level. It is also necessary to look at possibilities of providing tax incentives.

24. Lack of bargaining power by farmers is one of the major constraints since farmers are not allowed to quote their price; only the buyers quote the price at Mandis. Small quantities of produce, lack of aggregators, and lack of alternate platforms other than Mandis for sale of produce are some of the other issues being faced by farmers. Long chain of intermediaries and high cost of intermediation results in low price realization by the primary producers and wide gap between farm-gate prices to consumer price of the commodity. On the infrastructural and logistics front inadequate storage / warehousing facility, lack of transportation facility, negotiable warehouse receipts, credit facility are some of the contributing factors which are affecting the farmers. It is necessary to strengthen institutional mechanism, by organizing farmers associations, which would facilitate effective marketing system and collective bargaining power. NAFED at the National level and State Agricultural Federations at the State level have been set up for facilitating the farmers. Some of the Farmers Cooperatives have brought in real benefits to the farmers and in very few cases Primary Agricultural Cooperatives (PACs) are working on sustained basis. For bringing about the synergy between farmers and industries, models like contract farming and corporate farming exist having their own advantages and disadvantages. A transparent national level futures market has been created to provide price signals to participants.
Price ticker boards across 870 mandis have been installed to provide real time price information to farmers.

25. For linking farmers to markets several models are in existence viz. Corporate agencies working with farmers, Commodity Cooperatives, Producer Companies, Societies and Federations etc. Each model has its own advantages and disadvantages. There are several issues of concern of the farmers as well as Corporates. These issues need to be addressed effectively for forging mutually beneficial farmer-corporate partnership and scaling up the same in future. Building Farmer Producer Organizations (FPOs) to aggregate land and farmers holds considerable promise. However, these FPOs have to be enabled through investing in FPO managerial capacity and technical knowledge, linking to reliable credit, equity support & risk mitigation measures, creating framework for facilitating contract farming (APMC reform; DRM; innovative funding mechanisms) and favourable policy environment (tax incentives). A three tier frame work needs to be created with first tier of Farmer Groups (FGs) at village level for crop planning, seed production, demonstration, knowledge sharing, aggregation; second tier of Kisan Producer Companies at Block level for addressing issues of credit, inputs, technology, capacity building, marketing linkages and the third tier of Federation of KPCs at State level for policy advocacy, explore wider markets, and strategic partnerships.

26. Out of the 249 CPSEs in the country, 20 are involved in activities of agriculture and allied sector. Agriculture and allied activities taken up by CPSEs include production & distribution of quality seeds and planting material, manufacture, import & distribution of fertilizers, manufacture & distribution of agro chemicals; manufacture of farm equipment (Tractors, Power tillers etc.); providing post-harvest infrastructure (Warehousing, Logistics, Cold chain etc.); price support/price control functions for mandated commodities; Value addition & marketing of agro-products. The future strategies of CPSEs include identification of 5 pilot project locations in backward districts in rainfed areas; base-line survey in project area for identification of desired activities & level of intervention and development of customized models for sustainable agricultural development, dovetailing resources of various Govt. agencies & CPSEs.

27. A PPP model combining operational efficiencies of the private sector and the investment by the public sector with quantifiable outputs along with defined timelines and strategies may be evolved. This model should for move away from business as usual approach and take up area specific initiatives. Flexibility in Schemes, convergence of schemes, single window clearance to reduce transaction costs etc. should be the salient features of the model.

28. Small farmers have problems of access to new technology, poor knowledge on disease management, high cost of finance, Market risk - no assured price, less realization due to middlemen margin, high post-harvest losses etc. These factors lead to uncertain income and tend to slip the farmers into poverty. What is required is a 360° intervention with the farmers addressing all interlinked components of farming viz. seeds, inputs, credit, disease, storage, marketing etc. in a holistic manner. A successful partnership of farmers and industry helps to break the myths that big companies exploit farmers; small farmers not quick to learn and traditional chain of intermediaries is the best for the farmer.

29. For attracting youth in the coming years to take up agricultural enterprises, it is essential to bring about mechanization of agricultural activities. On the part of Industries, they have to understand the needs of the customers, both national and international. Forging an effective farmer-industry partnership poses host of challenges for both farmers and industry due to several reasons ranging from lack of mutual trust, existing policy and legal constraints, frequent political changes etc. There are considerable opportunities for forging such partnerships but effective strategies needs to be developed for achieving success.

30. The Warehousing Corporation, while working out its business models should have detailed discussions with Small Farmers Consortium, Department of Financial Services, FICCI, PepsiCo under the guidance of Secretary, Agriculture and arrive at a viable model/ models.