INAUGURAL SPEECH OF SHRI SHARAD PAWAR, UNION MINISTER OF AGRICULTURE AND CONSUMERS AFFAIRS, FOOD AND PUBLIC DISTRIBUTION ON THE OCCASION OF THE 4TH WCCA, TO BE HELD 4TH FEBRUARY, 2009, NEW DELHI.

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2. I am delighted to welcome all the delegates assembled from different parts of the world in New Delhi to attend the 4th World Congress on Conservation Agriculture. I would also like to express my happiness that the International Community of Conservation Agriculturists has chosen India as

the venue for this important Congress. I consider it as a recognition of the important role that India plays in developing management strategies for sustainable agriculture. I compliment the Indian Council of Agricultural Research and National Academy of Agricultural Sciences for jointly organizing the Congress in partnership with the International Fund for Agricultural Development, Food and Agriculture Organization, several CGIAR Centres along with the Indian Society of Soil Science and Indian Society of Agricultural Economics.

3. The Congress is being held at an appropriate time when the whole world is seriously concerned with the challenges posed by demands of the burgeoning population. The previous year witnessed a steep decline in global food stocks and sky-rocketing prices of food commodities due to a number of supply-side constraints, including deteriorating production environments and the growing menace of global warming.

4. The slow down in the agriculture sector was a widespread phenomenon encountered during the last decade which adversely affected the farmers in all the countries, and more so, in poverty-ridden and poor countries. The problem was further aggravated by the fuel crisis, which was responsible for increased fertilizer prices and transportation costs besides diversion of sizeable food grain area in favour of biofuel production. Therefore, enhancing agricultural production, increasing farm income, accelerating agricultural growth and conserving natural resources are the major challenges facing the world community today. In this context, the theme chosen for this congress, `**Innovations for Improving Efficiency, Equity and Environment**' is very relevant and timely.

5. In India, agriculture plays an important role as it accounts for about 18 per cent of the gross domestic product and supports nearly 58% of the total working population for employment. Food grain production increased significantly from a low of 50 million tonnes during 1950-51 to a record of 230.7 million tonnes in 2007-08. The population of India, which is around 1.1

billion at present, is expected to grow to 1.3 billion by the year 2025. The demand for food is growing rapidly due to increasing population and rising income levels and we need to produce about 320 million tonnes of food grains by 2025. It implies more pressure on our existing land, soil and water resources which are already in short supply and degraded, a situation being faced by many developing countries today.

6. Maintenance of self-sufficiency would further require increasing the cropping intensity, enhancing the input use efficiency, and putting more area under irrigation. Thus, the major concern is to efficiently use irrigation water, avoid problems of waterlogging and salinity and at the same time, promote rainwater harvesting and water conservation methods in rainfed areas to enhance their production potential. Rainfed agriculture needs a more focused approach on priority because about half of the cultivated area would remain rainfed even after utilizing the irrigation potential fully.

7. The rising energy costs is another major concern. The increased dependence of modern agriculture on fossil fuel-based energy, while reducing drudgery, simultaneously increases the risk of the farmer to fluctuations in fuel prices. Labour costs have also risen sharply in recent times forcing farmers to go in for mechanization. The increased frequency of extreme weather events like droughts, floods, heat-waves and cold-spells being witnessed and attributed to climate change, are also causing frequent losses to farmers. Any strategy in agriculture, therefore, should address these key challenges of land degradation, water availability, energy requirement and labour costs. I am happy to know that, conservation agriculture addresses all these key challenges.

8. The key features that characterize conservation agriculture include: minimum soil disturbance by adopting no-tillage and minimum traffic for agricultural operations, retention of crop residues on the soil surface and adopting spatial and temporal crop sequencing / crop rotation for deriving maximum benefits from inputs and minimizing adverse environmental

impacts. This practice reduces soil erosion, sustains soil fertility, improves water management and reduces production costs, energy savings, making inputs and services affordable to small-scale farmers. It is the resource-saving agricultural crop production that strives to achieve acceptable profits together with high and sustained production levels while conserving the environment. It also enhances natural biological processes above and below the ground.

9. Conservation tillage or no-tillage is now being practised on almost 100 million ha area worldwide with the major countries being USA, Brazil, Argentina, Canada and Australia. However, the adoption of the technology in Asian countries has been low. By adopting the no-tillage system, some of the countries have reportedly got substantial benefits in terms of grain production, revenue generation and environmental protection.

10. In India, conservation agriculture is a relatively newer approach and efforts to adopt and promote resource conservation technologies have been underway for nearly a decade, but it is only in the past 4-5 years that

technologies have found increased acceptance by the farmers. This effort has been spearheaded by Rice-Wheat consortium for Indo-Gangetic Plains, a CGIAR eco-regional initiative involving several CG centres and the National Agricultural Research Systems of India, Pakistan, Bangladesh and Nepal. Concerns of declining profitability and increasing production costs are the major factors forcing farmers to look for alternative technologies, particularly, in the northwest region encompassing Punjab, Haryana and western Uttar Pradesh. The major success in the last few years has been the development and deployment of conservation agriculture technologies with farmers in the rice-wheat system. These technologies range from zero-till machine with a special opener for placing seed in the soil, to reduced tillage and bed planting. In 2000, one hundred thousand ha of no-till wheat was planted in Pakistan and India. Today, in India alone, the area under conservation tillage has increased to more than 2 million ha. This has benefited farmers through less cost, more yield and more income. With consistent efforts, scientists have developed a basket of technologies and made them available to the farmers.

11. Management of crop residues and sowing of crops into loose residues are the key issues not only to avoid burning and environmental & air pollution but also for addressing issues of organic matter decline and nutrient depletion and mining. In farmer participatory trials conducted in western UP, zero-tilled wheat when mulched with residues of the previous rice crop not only improved the wheat yield but also saved irrigation time and reduced weed population. The issue of planting crops into loose residues is now being well addressed through newly developed machines like Happy seeder, Turbo seeder and double disc till drill. These machines can work with more than 5 t/ha rice residue in field as mulch and provide better surface soil physical and biological properties, improve infiltration and water use efficiency, plant stands, higher yields and an alternative eco-friendly utilization in place of burning. It is evident that, modern resource conservation technologies are cost-effective, improve natural resource use efficiency and have significant environmental benefits, especially, with regard to greenhouse gas emissions. In terms of increasing water productivity, these new resource conservation technologies can make significant contributions. Zero-till, bed planting systems, new non-

puddled rice establishment techniques coupled with laser land levelling can go a long way in increasing the use efficiency of this vital natural resource.

12. However, there are lot of challenges for further promotion of the technology in India and neighbouring Asian countries. Unlike America and European countries where few farmers cultivate large farms, the farming systems in India are quite complex and the farmers are resource-poor. A judicious blend of cost-effective and appropriate technology along with a matching policy support only can help in up-scaling such new technologies. A lot of research is required to be carried out to understand the scope of this technology beyond the Indo-Gangetic plains and make it further cost-effective even within the IGP areas. Farmers' awareness and capacity building have to be taken up in a big way. The private sector has to be involved simultaneously in technology development so that affordable farm machinery becomes available to the farmers for practising conservation agriculture.

13. It is a challenge for all stakeholders, the scientific community, farmers, extension agencies and the industry to understand the opportunities, and evolve strategies different from those that were adopted in the past in conventional agriculture. I understand that the Congress will provide an excellent opportunity to the delegates to share successful experiences, identify R&D areas, and develop future partnerships with countries from different parts of the world. I sincerely hope that the international community engaged in conservation agriculture will dwell on issues related to conservation agriculture and come out with an appropriate implementable action plan.

14. It is my pleasure to inaugurate the 4th World Congress on Conservation Agriculture and I wish it a grand success.

Thank you.