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**STANDING COMMITTEE ON AGRICULTURE, ANIMAL  
HUSBANDRY AND FOOD PROCESSING  
(2023-24)**

**SEVENTEENTH LOK SABHA**

**Ministry of Agriculture and Farmers Welfare  
(Department of Agricultural Research and Education)**

**‘Research and Development in Farm Mechanization for Small  
and Marginal Farmers in the Country’**

**{Action Taken by the Government on the Observations/ Recommendations contained in  
the Fifty-Eighth Report (17<sup>th</sup> Lok Sabha) of the Standing Committee on Agriculture,  
Animal Husbandry and Food Processing (2022-23)}**

**SIXTY-NINTH REPORT**



**LOK SABHA SECRETARIAT  
NEW DELHI  
FEBRUARY, 2024 /MAGHA 1945 (SAKA)**

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Animal Husbandry and Food Processing (2022-23)}

*Presented to Lok Sabha on 07.02.2024*

*Laid on the Table of Rajya Sabha on 07.02.2024*



LOK SABHA SECRETARIAT  
NEW DELHI  
FEBRUARY, 2024 /MAGHA 1945 (SAKA)

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Published under Rule 382 of the Rules of Procedure and Conduct of Business in Lok Sabha (Sixteenth Edition) and Printed by Lok Sabha Secretariat.

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**COMPOSITION OF THE STANDING COMMITTEE ON AGRICULTURE, ANIMAL  
HUSBANDRY AND FOOD PROCESSING (2022-23)**

**Shri P.C. Gaddigoudar- Chairperson**

**MEMBERS**

**LOK SABHA**

2. Shri Horen Sing Bey
3. Shri A. Ganeshamurthi
4. Shri Kanakmal Katara
5. Shri Abu Taher Khan
6. Shri Ram Mohan Naidu Kinjarapu
7. Shri Mohan Mandavi
8. Shri Devji Mansingram Patel
9. Smt. Sharda Anilkumar Patel
10. Shri Bheemrao Baswanthrao Patil
11. Shri Shrinivas Dadasaheb Patil
12. Shri Vinayak Bhaurao Raut
13. Shri Pocha Brahmananda Reddy
14. Shri Rajiv Pratap Rudy
15. Mohammad Sadique
16. Shri Devendra Singh *alias* Bhole Singh
17. Shri Virendra Singh
18. Shri V.K. Sreekandan
19. Shri Ram Kripal Yadav
20. VACANT<sup>#</sup>
21. VACANT<sup>\*</sup>

**RAJYA SABHA**

22. Smt. Ramilaben Becharbhai Bara
23. Shri Masthan Rao Beeda
24. Dr. Anil Sukhdeorao Bonde
25. Shri S. Kalyanasundaram
26. Shri Surendra Singh Nagar
27. Shri Kailash Soni
28. Shri Randeep Singh Surjewala
29. Shri Ram Nath Thakur
30. Shri Vaiko
31. Shri Harnath Singh Yadav

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*\* Vacant w.e.f. 10.10.2022 due to demise of Shri Mulayam Singh Yadav on 10.10.2022 vide Bulletin- Part II, Para No. 5316 dated 14.10.2022.*

*# Vacant w.e.f.29.04.2023 due to disqualification of Shri Afzal Ansari from Lok Sabha Membership from the date of his conviction in terms of the provision of Article 102(1)(e) of the Constitution of India read with Section 8 of the Representation of the People Act, 1951.*

**COMPOSITION OF THE STANDING COMMITTEE ON AGRICULTURE, ANIMAL  
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**Shri P.C. Gaddigoudar- Chairperson**

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28. Shri Ram Nath Thakur
29. Shri Vijay Pal Singh Tomar\*
30. Shri Vaiko
31. Shri Harnath Singh Yadav

\* Shri Vijay Pal Singh Tomar, MP, Rajya Sabha has been nominated to the Committee *vide* Bulletin Part-II, Para No. 7523 dated 29.09.2023 *vice* Shri Surendra Singh Nagar *w.e.f.* 26.09.2023

## SECRETARIAT

1. Shri Shiv Kumar Wadhawan - Additional Secretary
2. Shri Uttam Chand Bharadwaj - Director
3. Shri N. Amarathiagan - Under Secretary
4. Shri S. Vijayaraghavan - Executive Officer

## INTRODUCTION

I, the Chairperson, Standing Committee on Agriculture, Animal Husbandry and Food Processing (2023-24), having been authorized by the Committee to submit the Report on their behalf, present this Sixty-Ninth Report on Action Taken by the Government on the Observations/Recommendations contained in the Fifty-Eighth Report (Seventeenth Lok Sabha) of the Standing Committee on Agriculture, Animal Husbandry and Food Processing (2022-23) on the subject 'Research and Development in Farm Mechanization for Small and Marginal Farmers in the Country' pertaining to the Ministry of Agriculture and Farmers Welfare (Department of Agricultural Research and Education).

2. The Fifty-Eighth Report (Seventeenth Lok Sabha) of the Committee on the subject 'Research and Development in Farm Mechanization for Small and Marginal Farmers in the Country' was presented to Lok Sabha and laid on the table of Rajya Sabha on 21.07.2023. The Action Taken Notes on the Report were received on 18.10.2023.

3. The Report was considered and adopted by the Committee at their Sitting held on 06.02.2024

4. An Analysis of the action taken by the Government on the Observations/Recommendations contained in the Fifty-Eighth Report (Seventeenth Lok Sabha) of the Committee is given in Appendix.

**NEW DELHI;**  
**06 February, 2024**  
**17 Magha, 1945 (Saka)**

**P.C. GADDIGUDAR**  
***Chairperson***  
***Standing Committee on Agriculture,***  
***Animal Husbandry and Food Processing***



## CHAPTER - I

### REPORT

This Report of the Standing Committee on Agriculture, Animal Husbandry and Food Processing deals with the Action Taken by the Government on the Observations/Recommendations contained in the Fifty-Eighth Report (Seventeenth Lok Sabha) of the Standing Committee on Agriculture, Animal Husbandry and Food Processing (2022-23) on the subject 'Research and Development in Farm Mechanization for Small and Marginal Farmers in the Country' pertaining to the Ministry of Agriculture and Farmers Welfare (Department of Agricultural Research and Education) which was presented on 21.07.2023 to the Lok Sabha and Laid on the Table of Rajya Sabha on 21.07.2023.

1.2 The Ministry of Agriculture and Farmers Welfare (Department of Agricultural Research and Education) has furnished Action Taken Replies in respect of all the 16 Observations/Recommendations contained in the Report. These have been categorized as under:

- Observations/Recommendations that have been accepted by the Government:  
**Recommendation Nos. 2,5,6,8,9,10,11,15 and 16**  
**Chapter - II**  
**Total - 09**
- Observations/Recommendations in respect of which the Committee do not desire to pursue in view of the Government's Reply:  
**Recommendation Nos. 3,4,7 and 12**  
**Chapter - III**  
**Total - 04**
- Observations/Recommendations in respect of which Action Taken Replies of the Government have not been accepted by the Committee:  
**Recommendation Nos. 1 and 14**  
**Chapter - IV**  
**Total - 02**
- Observations/Recommendations in respect of which final replies of the Government are still awaited:  
**Recommendation No. 13**  
**Chapter - V**  
**Total - 01**

1.3 The Committee believe that utmost importance would be given by the Ministry to implement the Observations/Recommendations accepted by the Government. In cases, where it is not possible for the Ministry to implement the Recommendations in letter and spirit for any reason, the matter may be reported to the Committee with the reasons for Non-implementation. The Committee desire that further Action-Taken Notes on the Observations/Recommendations contained in Chapter - I and final replies in respect of Recommendations contained in Chapter - V of this Report be furnished to them at an early date.

1.4 The Committee will now deal with the action taken by the Government on some of the Recommendations in the succeeding paragraphs.

## **A. STATUS OF AGRICULTURE MECHANIZATION IN INDIA**

### **Recommendation No. 1**

1.5 The Committee had observed/recommended as follows:—

"The Committee note that Agriculture Mechanization is essential to modern agriculture to increase the productivity and for making judicious and cost-effective use of inputs like seeds, fertilizers, chemicals & pesticides and natural resources like water, soil nutrients, etc. The Committee also note that for the purpose, the Government have undertaken several developmental Programmes, Schemes, reforms at policy level with the intent and focus to increase employment and income of the farmers.

The Committee further note that India accounts for only about 2.4% of the World's geographical area and 4% of its water resources, but has to support about 17% of the world's human population and 15% of the livestock. Agriculture is an important Sector of the Indian economy, approximately accounting for 20% of the Nation's GDP. The Committee also note that Agriculture in India is currently growing at an average Compound Annual Growth Rate (CAGR) of 2.8%. About half of the population relies on agriculture as its principal source of income.

The Committee note that the overall Agriculture Mechanization Level of the country is 47% which is comparatively lower than that of other developing countries such as China (59.5%) and Brazil (75%). Farmers need complete mechanization package for major crops. The Committee also note that contribution of Agricultural Mechanization in India leads to saving in seed 15-20%, in fertilizer 15-20%, improvement in germination rate 7-25%, saving in time 20-30%, in weed 20-40% in labour 20-30%, increase in cropping intensity 5-20% and increase in crop yield 13-23%.

There are 86% Small and Marginal Farmers having less than 2 Hectare of land holdings. Unless machines appropriate for small holdings are made available or substantial farm amalgamation takes place, it is difficult for the Small and Marginal Farmers to purchase their own machinery. The Committee desire that Farm Machinery for majority of the farmers, who are Small and Marginal Farmers and who do not have adequate funds to purchase capital intensive implements should be developed and further incentivized.

The Committee have been apprised of the fact that if we compare our country with the developed nations then till date on an average only 47% Agriculture Mechanization has been done and it is expected that another 25 years are required to achieve the level of 75-80% mechanization from the present level of 47%. The Government has taken various initiatives and is helping farmers by providing subsidy to procure machinery to improve farm input and farm - power availability.

The Committee do feel that economic growth in Indian Agricultural Sector lags behind the parallel growth in Industry and Services Sector, creating an ever widening rural-urban income disparity. The Agricultural Mechanization plays a key role in improving agricultural production, productivity and efficiency. The Committee, therefore, recommend that the Government should strive hard to promote Agricultural Mechanization by according priority for development of small equipments/machines for Small and Marginal Farmers as there is an urgent need to bring in quality and value addition of the farm produce enabling the farmers to take second and subsequent crops making agriculture more attractive and profitable. Apart from this the Committee strongly desire that the Government must strive hard to achieve a level of 75% in farm mechanization from the present level of 47% in a much shorter period than that which has been stated by the Department to be 25 years."

1.6 In its Action taken reply, the Ministry has stated:-

"Some ICAR Institutes and Centres of the All India Coordinated Research Project (AICRP) are engaged in research and development of the equipment/machines for mechanization of agricultural production and post-production activities for small and marginal farmers. The improved implement and machinery operated small tractor and power tiller are also developed for field and horticultural crops. The developed equipment/ technologies are being

commercialized and transferred to potential stakeholders. The average size of operational holdings is shrinking in all States and the percentage of marginal, small and semi-medium operational holdings is increasing due to continuing fragmentation of land which is making individual ownership of agricultural machinery progressively more difficult. Smaller and fragmented land size is not suitable for mechanized operations and therefore there is regional disparity in the level of farm mechanization. Inadequacy of skilled manpower for operation, repair and maintenance of Tractors, Power tillers, Combines Harvesters and other Tractor & self-propelled agricultural Machinery is another area of concern. However, the Department of Agriculture & Farmers Welfare is actively boosting mechanization levels by implementing the Sub-Mission on Agricultural Mechanization (SMAM) to overcome existing constraints in agriculture. The primary focus is to establish block-level custom hiring service infrastructure with comprehensive machinery sets for all major crop operations in the respective regions. The Cooperative Societies of Farmers, Farmers Producer Organizations (FPOs), Self Help Groups (SHGs), Panchayats are supported with higher rate of financial assistance for establishment of Farm Machinery Banks at village levels. So far, farm machinery and equipment are available to the small and marginal farmers on rental basis as per their requirements. The availability of Custom Hiring Centres (CHCs)/Village Level Farm Machinery Banks (FMBs) are being increased through the Aspirational Districts Programme by way of establishing at least 2 CHCs/FMBs in each block in the identified aspirational districts to address the regional disparity in level of mechanization. It will also address the issues of timely availability of appropriate machinery to the farmers engaged in underdeveloped regions of the country. Focus is also towards creating infrastructure of post-harvest processing and value addition through women Self Help Groups so that the facilities are available at the farmgate. The Institute ICAR-CIAE, Bhopal; 25 centres of the AICRP on Farm Implements and Machinery (FIM); and four of Farm Machinery Training and Testing Institutes (FMTTIs) at Budni (MP), Hisar (Haryana), Anantapur (Andhra Pradesh) and Biswanath Chariali in Assam, are imparting skill-oriented training in the area agricultural mechanization to various groups of beneficiaries like Farmers, Rural Youth technicians, undergraduate Agriculture /Mechanical, Diploma holder in ITI

trade Certificate in Tractor/agricultural Machinery operators /technician, Management /Supervisory level trainees from Government sectors and industries, etc. The existing capacity of all four FMTTIs has been increased and the existing infrastructure is also being augmented to meet the increasing demand. All these initiatives will help in increasing the level of mechanization at a faster pace."

- 1.7 **The Committee, had inter-alia recommended that the Government should strive hard to promote Agricultural Mechanization by according priority to the development of small equipments/machines for Small and Marginal Farmers. The Committee had also expressed their desire that the Government must strive hard to achieve a level of 75% in Farm Mechanization from the present level of 47% in a much shorter period than the targeted time period of 25 years.**

**The Ministry in its Action Taken reply has given a detailed reply stating about various constraints in Farm Mechanization including the average size of operational holdings, which is Shrinking in all States and the increasing number of marginal, small and semi-medium operational holdings due to continuing fragmentation of land. The Committee have been informed that the Department of Agriculture & Farmers Welfare is actively boosting mechanization levels by implementing the Sub-Mission on Agricultural Mechanization (SMAM) to overcome existing constraints in Agriculture. The primary focus is to establish block-level custom hiring service infrastructure with comprehensive machinery sets for all Major Crop Operations in the respective regions. However, the Action Taken Reply is silent on the specific point hammered in the recommendation of**

**the Committee that the Government must strive hard to achieve the level of 75% farm mechanization from the present level of 47% in a much shorter period than the set target of 25 years. The Committee, therefore, once again stress upon the Department that the desired Farm Mechanization level should be achieved in a shorter period than the period, which has been stated by the Department. The Committee would like to be informed of the action taken in this regard.**

## **B. AGRICULTURAL EQUIPMENT MARKET GROWTH**

### **Recommendation No. 2**

1.8 The Committee had observed/recommended as follows:—

"The Committee observe that the Indian Agricultural Equipment Market is experiencing a rapid growth with strong potential for future growth as well. The demand for Agriculture Machinery in Asia-pacific Region was more than twice than in any other Region. The tractors, power tillers, combine harvesters, rotavators, threshers and rice trans-planters are some of the equipment for which a surge in demand has been witnessed over the past few years in our country also.

The Committee also note that no formal study has been conducted to assess the farm mechanization in the country. However, one objective has been mentioned in the Impact Study conducted for Department of Agriculture and Farmers Welfare (DA&FW). In the Report submitted by M/s WAPCOS Limited in August 2020, data of farm power availability (state wise, district wise) has been provided through which the state-wise mechanization gap has been identified and strategies have been formulated. However, a nation-wide study has not been made to make a proper plan based on need and gap. A proposal by ICAR has been submitted to DoA&FW for this purpose. The Committee feel that there is an urgent need to conduct a systematic study to know the Mechanization Level in the country in purely objective terms.

The Committee also suggest that the Department must look into the proposal of ICAR submitted to DoA&FW regarding State-wise mechanization gaps identified along with strategy so that real-time data can be procured to prepare hassle free implementable plan for requisite mechanization for Small and Marginal Farmers.

The Committee, therefore, recommend that the Ministry should strive hard to implement the Scheme as per the targets set by them in a properly planned manner."

1.9 In its Action taken reply, the Ministry has stated:-

"In order to expand and strengthen the agricultural mechanization sector in the country by way of putting in place the support infrastructure for implementing the programmes and schemes with greater knowledge, better access and expanded opportunities for small and marginal farmers, a systematic study and availability of data is most important. Such information/data is normally available through an evaluation and impact assessment studies conducted periodically. ICAR and DA & FW have jointly prepared a proposal for nationwide mechanization studies, and they are currently finalizing plans and resources in collaboration."

**1.10 The Committee had Observed that no Formal Study was conducted to assess Farm Mechanization in the country and expressed their view that there was an urgent need to conduct a systematic study to know the mechanization level in the country in purely objective terms. The Committee had also suggested that the Department must look into the proposal of ICAR for identification of State-wise mechanization gaps along with strategy to prepare hassle free implementable plan for requisite mechanization for Small and Marginal Farmers.**

The Ministry in its Action taken reply has stated inter-alia that it is currently finalizing plans and resources in collaboration with ICAR for nationwide mechanization studies. The Committee, while appreciating the progress in its efforts for agriculture mechanization, desire that the Ministry need to expedite their plans and resources for the proposed nation-wide mechanization studies for Small and Marginal farmers so that the desired objectives be achieved at the earliest. The Committee would like to be informed of the progress made in this regard.

## **C. Upgradation of Testing Centres**

### **Recommendation No. 8**

1.11 The Committee had observed/recommended as follows:-

"The Committee note that there is need for streamlining of testing procedure, training of engineers and testing of farm equipments as technologies are changing fast and there is need for up-gradation of Testing Centres. The Committee also note that Test Centres of Agricultural Machines have been established at the selected Institutes for regularly testing of the machines for certification. Scientists are involved in evolving/updating standards for Agricultural Machines regularly through Bureau of Indian Standards. The Committee also note that these recognized Test Centres of Agricultural Machine Institutes are slowly upgrading their facilities from their own available resources. If financial support is given from time to time for this purpose, the upgradation process shall get accelerated.

The Committee feel that some mechanism should be evolved by the Government to allocate funds to these Institutes for testing Commercial Machines and upgradation of these testing centres by looking into the issue of non-availability of financial support. The Department should impress upon the Ministry of Finance to allocate the required funds so that the objective of Upgradation of Testing Centres can be achieved. The Committee would like to be apprised of the action taken in this regard."

1.12 In its Action taken reply, the Ministry has stated:-

"Creation and upgradation of facilities for testing at the Farm Machinery Training & Testing Institutes (FMTTIs) are being taken up through the Annual Action Plans of the FMTTIs and necessary budget is allocated to them. One-time grant (Maximum ₹1.50 Crores per institute) has also been released by DA&FW to the 17 identified institutes under State Governments, ICAR and State Agricultural Universities for creation/upgradation of infrastructure for testing of the agricultural machines and equipment under the provisions available in the scheme Sub-Mission on Agricultural Mechanization.

A proposal for upgradation of the existing testing centres (Post-harvest Equipment/Machinery Testing Centre at ICAR-CIAE, Bhopal; and Farm Machinery and Post-harvest Equipment/Machinery testing centre, ICAR-CIAE Regional Station, Coimbatore) has also been submitted to DA&FW for consideration."



**1.13** The Committee had expressed that some mechanism be evolved to allocate funds for upgradation of Farm Machinery Training and Testing Institutes (FMTTI) and recommended that the Department should impress upon the Ministry of Finance to allocate the required funds. The Ministry in its Action Taken Reply has stated that creation and upgradation of facilities at the FMTTIS are being taken up through the Annual Action Plans of FMTTIS and necessary budget is allocated to them and an one time grant of (maximum Rs. 1.50 Crore per Institute) has been released to the 17 Identified Institutes. Further a proposal for upgradation of Post-Harvest Equipment/Machinery Testing Centre at ICAR - CIAE, Bhopal, and Farm Machinery and Post-Harvest Equipments/Machinery Testing Centre, ICAR-CIAE, Regional Station Coimbatore has also been submitted to DA&FW for consideration.

In this regard, the Committee would like to know about the outcomes of the ongoing process of upgradation of the existing Testing Centres undertaken by the DA&FW and emphasize that a fine tuned Mechanism be evolved for upgradation of FMTTIS.

#### **D. Custom Hiring Centres and Farm Machinery Banks**

##### **Recommendation No. 10**

**1.14** The Committee had observed/recommended as follows:—

"The Committee observe that one of the major objectives of SMAM is to promote custom hiring of farm machinery centres and Farm Machinery Banks (maintain a set of required equipments and use on sharing basis), so that Small and Marginal Farmers can get the benefits of Agriculture Mechanization. The Custom Hiring Centres have been established under SMAM and it has proved to be a successful model in some States. The Committee also note that Tractor and

self-propelled high capacity farm implements and machinery are being promoted on custom hiring basis for use by small farm holders without owning the high value farm equipments/machines. The financial assistance @#40% of the Project Cost is also provided to rural youth and farmers as an entrepreneur to own and run Hiring/Custom Hiring Hubs/ Centres.

The Committee further note that Establishment of Custom Hiring Centers/Farm Machinery Banks scheme has enabled farmers to access/ hire Hi-tech and high value machines, which cannot be purchased by the individual farmers. Since 2014-15 to till date total 37,097 Custom Hiring Centres have been established under SMAM.

The Committee note with satisfaction that Farm Machinery Banks have been established in almost all the States except the Union Territories of Ladakh and Dadra & Nagar Haveli. The States like Andhra Pradesh, Tamil Nadu, Haryana, Chhattisgarh, Madhya Pradesh and UP are the front runners in establishing these Centres. The Committee further note that a well equipped Custom Hiring Centre provides Farm Mechanization support to neighboring 100-200 farmers covering about 200 ha. in a cropping season.

The Committee also observe that a total of 17727 Farm Machinery Banks have been established at Village Level and number of Hi-Tech Hubs established is 403.

The Committee do feel that in spite the best efforts of the Government, the benefits of Farm Machinery banks have not percolated to Districts, Talukas, Panchayat and Gram Sabha Levels. The Committee feel that majority of the farmers are not aware of the benefits of the scheme of Farm Machinery Banks and are not able to benefit themselves from the advantages of scientific development. The Committee, therefore, recommend that wide publicity of the benefits of this Scheme should be given amongst all farmers especially, the Small and Marginal Farmers through social and electronic media. Moreover, the Committee do desire that an App like 'Krishak Mitra' be developed to be used by Small and Marginal Farmers to locate and contact the Custom Hiring Centres/ Farm Machinery Banks in their close vicinity."

1.15 In its Action taken reply, the Ministry has stated:-

"Awareness on the importance of SMAM are created through capacity building and demonstration of new technology machines on the farmers' fields conducted by the Farm Machinery Training & Testing Institutes, *Krishi Vigyan Kendras* (KVKs), Agricultural Technology Management Agency (ATMA), Institutes of Indian Council of Agricultural Research (ICAR), State Agricultural Universities (SAUs), other State and Central Government Agricultural Institutions/Departments and Public Sector Undertakings (PSUs) of Government

of India engaged in agricultural activities. A multi-lingual mobile app-based aggregator platform 'FARMS' (Farm Machinery Solutions) App has also been launched, which facilitates hiring and renting of farm machinery from and by the Custom Hiring Centres/owners of the farm machinery. This mobile app encompasses a fair and transparent rental process while focusing on quality, dependability and timely delivery of the services. So far 74,144 service providers have registered on this app with more than 172,404 machines for renting. More than 524,09,976 farmers/other users have also registered for availing the services through this app."

- 1.16 **The Committee had inter-alia recommended that wide publicity about the benefits of the Scheme should be given amongst all Farmers especially, Small and Marginal Farmers through social and electronic media and the Committee also expressed desire that an App like 'Krishak Mitra' be developed for use by Small and Marginal Farmers to locate and engage the Custom Hiring Centres/Farm Machinery Banks for their requirements.**

**The Ministry, in its Action Taken Reply has stated that a Multi-lingual Mobile App based aggregator Platform 'FARMS' (Farm Machinery solutions) has been launched, which facilitates hiring and renting of Farm Machinery from the Custom Hiring Centres/ Owners of the Farm Machinery. This Mobile App encompasses fair and transparent rental process while focusing on quality, dependability and timely delivery of services. 74,144 Services Providers with more than 172,404 Machines have been registered on this App for renting and more than 524,09,976 Farmers/other users have also registered for availing the services through this App.**

**The Committee in this regard, would like to be apprised of the functional profile and performance of the App 'FARMS', as also its role in improving the functioning of the Custom Hiring Centres/Farm Machinery Banks in the interest of farmers.**

## **E. LOW HORSE POWER TRACTORS**

### **Recommendation No. 14**

1.17 The Committee had observed/recommended as follows:—

"The Committee note that the Tractors are most important Machines for Agriculture as these performs various farm operations. The selection of Horse Power for Tractor depends upon the size of the land and farm applications. The Committee note that the average farm size in India is small (1-08ha) and the small and marginal holdings of less than 2 Hectares account for 86% of the total operational holdings. The Committee feel that for Small and Marginal Farmers buying the Farm Equipments even after subsidy is very expensive. The Committee also note that Tractor parts and Components attract GST of 12%. The Committee, therefore, recommend that GST for Tractor parts and components be reduced suitably for the Tractors upto 40 hp. in order to bring down the cost of such Tractors. The Committee feel that this will not only help the Small and Marginal Farmers but also provide the much needed succor to them for buying the most important Farm equipment."

1.18 In its Action taken reply, the Ministry has stated:-

"The GST rate slabs are decided by the GST Council. The Ministry of Agriculture & Farmers Welfare since 2017 is continuously pursuing reduction/rationalization in the GST rates for agricultural machines and equipment including tractors, power Tillers and Combine Harvesters."

**1.19 The Committee had noted that Tractor Parts and Components attract GST of 12% and that the Farm Equipment even after subsidy is very expensive for Small farmers. The Committee therefore, had recommended that GST for Tractor Parts and components be reduced suitably for the Tractors upto 40 Hp.**

**The Ministry, in its Action Taken Reply has stated that the GST Rate Slabs are decided by the GST Council. The Ministry of Agriculture and Farmers Welfare since 2017 is continuously pursuing reduction/rationalization in the GST rates for Agricultural Machines and Equipments including Tractors, power tillers and combine harvesters.**

**Feeling not satisfied with the reply of the Ministry, the Committee once again reiterate their recommendation that the Ministry should, impress upon the GST Council about the dire need to suitably reduce the GST for Tractor Parts and Components for Tractors upto 40 Hp.**

## CHAPTER - II

### OBSERVATIONS/RECOMMENDATIONS THAT HAVE BEEN ACCEPTED BY THE GOVERNMENT

#### AGRICULTURAL EQUIPMENT MARKET GROWTH

##### **Recommendation No. 2**

The Committee observe that the Indian Agricultural Equipment Market is experiencing a rapid growth with strong potential for future growth as well. The demand for Agriculture Machinery in Asia-pacific Region was more than twice than in any other Region. The tractors, power tillers, combine harvesters, rotavators, threshers and rice trans-planters are some of the equipment for which a surge in demand has been witnessed over the past few years in our country also.

The Committee also note that no formal study has been conducted to assess the farm mechanization in the country. However, one objective has been mentioned in the Impact Study conducted for Department of Agriculture and Farmers Welfare (DA&FW). In the Report submitted by M/s WAPCOS Limited in August 2020, data of farm power availability (state wise, district wise) has been provided through which the state-wise mechanization gap has been identified and strategies have been formulated. However, a nation-wide study has not been made to make a proper plan based on need and gap. A proposal by ICAR has been submitted to DoA&FW for this purpose. The Committee feel that there is an urgent need to conduct a systematic study to know the Mechanization Level in the country in purely objective terms.

The Committee also suggest that the Department must look into the proposal of ICAR submitted to DoA&FW regarding State-wise mechanization gaps identified along with strategy so that real-time data can be procured to prepare hassle free implementable plan for requisite mechanization for Small and Marginal Farmers.

The Committee, therefore, recommend that the Ministry should strive hard to implement the Scheme as per the targets set by them in a properly planned manner.

## **REPLY OF THE GOVERNMENT:**

In order to expand and strengthen the agricultural mechanization sector in the country by way of putting in place the support infrastructure for implementing the programmes and schemes with greater knowledge, better access and expanded opportunities for small and marginal farmers, a systematic study and availability of data is most important. Such information/data is normally available through an evaluation and impact assessment studies conducted periodically. ICAR and DA & FW have jointly prepared a proposal for nationwide mechanization studies, and they are currently finalizing plans and resources in collaboration.

### **Comments of the Committee**

For comments of the Committee please see Para No. 1.10 of the Report.

## **TRAINING AND ORGANIZING DEMONSTRATIONS**

### **Recommendation No. 5**

The Committee note that the Department of Agriculture and Farmers Welfare is providing training and organizing demonstrations in the area of Farm Machinery through its four dedicated Farm Machinery Training and Testing Institutes (FMTTIs) Tractor Nagar Budni, Madhya Pradesh, Northern Region Farm Machinery Training & Testing Institute Sirsa Road Hissar, Haryana, Southern Region Farm Machinery Training & Testing Institute Anantapur, A.P and the North Eastern Region Farm Machinery Training & Testing Institute, Assam. The Committee note that the Budget is being allocated for all 4 FMTTIs since 2014-15 to 2022-23. For the Financial year 2014-15 Rs. 32.87 Crore, for 2015-16 Rs. 44.29 Crore, for 2016-17 Rs. 43.62 Crore, for 2017-18 Rs. 52.58 Crore for 2018-19 Rs. 59.71 Crore, for 2019-20 Rs. 53.34 Crore, for 2020-21 Rs. 56.98 Crore, for 2021-22 Rs. 54.55 Crore and 2022-23 Rs. 52.01 Crore has been allocated. The Committee has noted that funds allocation almost at constant level for the past few years and there has been some reduction in allocation of funds from 2021-22 onwards as compared to the funds allocated for the Financial year 2018-19 and 2020-21. The Committee have noted that there has been decrease in the fund allocation for the year 2021-22 and 2022-23 as compared to the year 2020-21.

The Committee further note that these Institutes are giving demonstrations on the advantageous usage of Farm Mechanization to Rural Youth and Farmers and encouraging for training them to establish the Custom Hiring Centres. The Committee feel that the Department should look into the issue of consistent and adequate allocation of funds and that the Department should impress upon the Finance Ministry not to reduce the budget allocations for this purpose. The Committee, therefore, recommend that for overall development of the mechanization of Agriculture, adequate funds be allocated and these funds should be used judiciously.

#### **REPLY OF THE GOVERNMENT:**

The funds are allocated to the FMTTIs based on their Annual Action Plan. DA&FW ensure to provide adequate budget for conducting training and demonstration activities to the FMTTIs.

#### **RESEARCH AND DEVELOPMENT FOR SMALL AND MARGINAL FARM MECHANISATION**

##### **Recommendation No. 6**

The Committee observe that the benefits of Research and Development for Small and Marginal Farmers are slowly percolating to villages and the level of mechanization in the country is increasing. The promotion of newly developed technology depends upon the state policy. ICAR has been constantly trying to popularize and promote its developed technologies and machines through the developmental Programmes including SMAM.

The Committee further note that the awareness is being created among farmers about improved farm equipments and farm mechanization regularly through ICAR Institute, 25 All India Coordinated Research Projects (AICRP) Centres of Farm Implement and machinery, 9 AICRP Centre of Utilization of Animal Energy by field demonstrations. Kisan Melas (731 Centres) also create awareness about Farm Mechanization among farmers in their respective districts.



The Committee also observe that the Department has Developed 158 improved equipments/machines, commercialized 47 technologies, manufactured 18500 machines and supplied to different centres, conducted prototype feasibility testing of 76 improved farm equipments for their adoption at 25 All India Coordinated Research Projects, Issued Test certificates of more than 400 commercial machines, Trained 7369 farmers by 188 training programmes, organized 16 Entrepreneurship Development Programme on Custom Hiring benefitting 450 rural youths, conducted Frontline Demonstrations of 105 improved farm machinery in 11278 ha in 4386 locations, 6575 farmers benefited by the demonstration programmes, Technologies- demonstrated to 10 lakh farmers through Kisan mela industries meet and agri-exhibitions during the last five years. The Committee feel that as per the statistics it comes to 2 lakh farmers per year, which is very negligible keeping into account the huge size of Indian peasantry. The Committee, therefore, desire that the Department should involve other agencies at District, Block and Village level, to give Technological Demonstration to all farmers at Grass Root Level. The Committee also feel that pamphlets and printed material in respect of new research in the field of machinery and tools along with a list of popular farm equipments/machines/tools for the use Small and Marginal Farmers be made available at all KVKs at District level.

The Committee observe that the proportion of Budgetary Allocation (Revised Estimates) made in favour of the Department out of the Total Budget (RE) of the Government of India has been reduced from 0.32% in 2018-19 to 0.29 % in 2019-20 and further to 0.22% in 2020-21. Further, the Committee note that the Department had proposed for the year BE 2021-22 Rs. 10241.68 Crore but has been allocated Rs 8513.62 Crore. Likewise, the Proposed RE for 2021-22 was Rs. 9330.53 Crore, but the Government allocated Rs. 8513.62 Crore. Similarly, for the period 2022-23, the BE proposed was 9698.91 Crore and BE allocated was Rs 8513.62 Crore. This has resulted in proportionate reduction in inter-sectoral allocation within the Department. The Budget provided for R&D to Farm Mechanization Scheme (ICAR-CIAE, Bhopal + 4 AICRPs+ 2 CRPs) during last four years shows around 30% less fund allocation during the year 2022-23 as compared to 2019-20. There has been continuous reduction in funds allocated for the Scheme during last few years i.e. for 2019-20 the allocated

amount was Rs. 2177.10 Lakh, for 2020-21 Rs. 1828.10 Lakh, for 2021-22 Rs 1797.14 Lakh and for 2022-23 (BE) Rs. 1586.64.

The Committee note that the Secretary, Department of Agricultural Research and Education had written DO letters dated 21.01.2022 and 11.11.2021 for additional allocation of funds to the Department. The issue was also discussed during the Pre-budget Meeting held for discussion of expenditure ceilings with Secretary Expenditure and the Department is continuously requesting the Ministry of Finance for enhanced budgetary allocation through various means available in Government set up. The Committee therefore, recommend that the Department should impress upon the Ministry of Finance about the need of the hour for investing money in R&D for Farm Mechanization in general and particularly for Small and Marginal Farmers, as mechanization plays a key role in improving agricultural production and productivity.

#### **REPLY OF THE GOVERNMENT:**

The list and other details of the popular farm equipment/machines/tools useful to the Small and Marginal Farmers is being shared with states, ATARIs and KVKs through e-mails. Hardcopy of the same will be sent to all ATARIs and KVKs after printing. The efforts were made to obtain adequate fund allocation from the Ministry of Finance/DARE for the Agricultural Mechanization scheme. The revised budget (RE) provided for R&D to Farm Mechanization Scheme (ICAR-CIAE, Bhopal + 4 AICRPs+ 2 CRPs) during 2022-23 was ₹1713.65 lakhs against the BE of ₹1586.64 lakhs. During 2022-23, ₹1713.38 lakhs (99.98%) was spent out of allocated amount of ₹ 1713.64 lakhs. The BE of ₹1959 lakhs for year 2023-24 and ₹3045 lakhs for year 2024-25 have been proposed for the mechanization scheme.

#### **UPGRADATION OF TESTING CENTRES**

##### **Recommendation No. 8**

The Committee note that there is need for streamlining of testing procedure, training of engineers and testing of farm equipments as technologies are changing fast and there is need for up-gradation of Testing Centres. The Committee also note that Test Centres of Agricultural Machines have been established at the selected Institutes

for regularly testing of the machines for certification. Scientists are involved in evolving/updating standards for Agricultural Machines regularly through Bureau of Indian Standards. The Committee also note that these recognized Test Centres of Agricultural Machine Institutes are slowly upgrading their facilities from their own available resources. If financial support is given from time to time for this purpose, the upgradation process shall get accelerated.

The Committee feel that some mechanism should be evolved by the Government to allocate funds to these Institutes for testing Commercial Machines and upgradation of these testing centres by looking into the issue of non-availability of financial support. The Department should impress upon the Ministry of Finance to allocate the required funds so that the objective of Upgradation of Testing Centres can be achieved. The Committee would like to be apprised of the action taken in this regard.

#### **REPLY OF THE GOVERNMENT:**

Creation and upgradation of facilities for testing at the Farm Machinery Training & Testing Institutes (FMTTIs) are being taken up through the Annual Action Plans of the FMTTIs and necessary budget is allocated to them. One-time grant (Maximum ₹1.50 Crores per institute) has also been released by DA&FW to the 17 identified institutes under State Governments, ICAR and State Agricultural Universities for creation/upgradation of infrastructure for testing of the agricultural machines and equipment under the provisions available in the scheme Sub-Mission on Agricultural Mechanization.

A proposal for upgradation of the existing testing centres (Post-harvest Equipment/Machinery Testing Centre at ICAR-CIAE, Bhopal; and Farm Machinery and Post-harvest Equipment/Machinery testing centre, ICAR-CIAE Regional Station, Coimbatore) has also been submitted to DA&FW for consideration.

#### **Comments of the Committee**

For comments of the Committee please see Para No. 1.13 of the Report.

## **ROLE OF SUB-MISSION ON AGRICULTURAL MECHANIZATION (SMAM)**

### **Recommendation No. 9**

The Committee observe that the Government is implementing "Sub-Mission on Agricultural Mechanization (SMAM)" for which 40-50% of the cost of the equipments is being provided to the Small and Marginal Farmers for the purchase of Tractors, Power Tillers, Combine Harvesters, Rotavators and Rice transplanter. The Committee also note that the SMAM Scheme is implemented through State and UT Governments. SMAM has Central Sector Schemes Component, in which Government of India contributes 100%, whereas in case of Centrally Sponsored Schemes Government of India contributes 60% and States contribute 40% except for the North Eastern States and Himalayan region States where it is 90% (Central Share) and 10% (State Share).

The Committee further note that Additional subsidy of 10% is provided to Small & Marginal Farmers over and above to general category farmers. The Small and Marginal Farmers are also using Tractors on rent basis. The Committee also note that SMAM has now been merged with the Rashtriya Krishi Vikas Yojana (RKVY) *w.e.f.* 30.09.2022. The Committee note that since the implementation of SMAM in 2014-15, total Rs. 5377.7Crore has been released under SMAM against which 14,24,179 Machines were distributed.

The Committee are of the opinion that in order to achieve the objective of increasing level of Farm Mechanization for the Small and Marginal Farmers, and with a view to offset the adverse economics of scale, arising due to small land holdings and high cost of individual ownership, the Government must promote low cost farm equipment. The Committee, further desire that the Government should try to promote this Scheme (SMAM) throughout the country by giving it wide publicity amongst the farmers so that they can take avail maximum benefits available on the purchase of Farm Equipments. However, the Committee further desire that with the merger of SMAM in RKVY, the mandate of SMAM should be kept intact and not diluted.

### **REPLY OF THE GOVERNMENT:**

On the recommendation of the Expenditure Finance Committee (EFC), the Sub-Mission on Agricultural Mechanization has been merged with *Rashtriya Krishi Vikas*

*Yojana* (RKVY). However, the interventions of agricultural mechanization will be implemented with the same objectives of increasing the reach of farm mechanization to small and marginal farmers and to the regions where availability of farm power is low; promoting 'Custom Hiring Centres' and 'Hi-tech Hubs of High Value Machines' to offset the adverse economies of scale arising due to small landholding and high cost of individual ownership, creating awareness among stakeholders through demonstration and capacity building activities and ensuring performance testing and certification at designated testing centres.

Awareness on the importance of SMAM are created through capacity building and demonstration of advance machinery at the farmers' fields conducted by the Farm Machinery Training & Testing Institutes, Institutes of Indian Council of Agricultural Research (ICAR), *Krishi Vigyan Kendras* (KVKs), State Agricultural Universities (SAUs), Agricultural Technology Management Agency (ATMA), State and other Central Government Agricultural Institutions/Departments and Public Sector Undertakings (PSUs) of Government of India engaged in agricultural activities.

## **CUSTOM HIRING CENTRES AND FARM MACHINERY BANKS**

### **Recommendation No. 10**

The Committee observe that one of the major objectives of SMAM is to promote custom hiring of farm machinery centres and Farm Machinery Banks (maintain a set of required equipments and use on sharing basis), so that Small and Marginal Farmers can get the benefits of Agriculture Mechanization. The Custom Hiring Centres have been established under SMAM and it has proved to be a successful model in some States. The Committee also note that Tractor and self-propelled high capacity farm implements and machinery are being promoted on custom hiring basis for use by small farm holders without owning the high value farm equipments/machines. The financial assistance @40% of the Project Cost is also provided to rural youth and farmers as an entrepreneur to own and run Hiring/Custom Hiring Hubs/ Centres.

The Committee further note that Establishment of Custom Hiring Centers/Farm Machinery Banks scheme has enabled farmers to access/ hire Hi-tech and high value

machines, which cannot be purchased by the individual farmers. Since 2014-15 to till date total 37,097 Custom Hiring Centres have been established under SMAM.

The Committee note with satisfaction that Farm Machinery Banks have been established in almost all the States except the Union Territories of Ladakh and Dadra & Nagar Haveli. The States like Andhra Pradesh, Tamil Nadu, Haryana, Chhattisgarh, Madhya Pradesh and UP are the front runners in establishing these Centres. The Committee further note that a well equipped Custom Hiring Centre provides Farm Mechanization support to neighboring 100-200 farmers covering about 200 ha. in a cropping season.

The Committee also observe that a total of 17727 Farm Machinery Banks have been established at Village Level and number of Hi-Tech Hubs established is 403.

The Committee do feel that in spite the best efforts of the Government, the benefits of Farm Machinery banks have not percolated to Districts, Talukas, Panchayat and Gram Sabha Levels. The Committee feel that majority of the farmers are not aware of the benefits of the scheme of Farm Machinery Banks and are not able to benefit themselves from the advantages of scientific development. The Committee, therefore, recommend that wide publicity of the benefits of this Scheme should be given amongst all farmers especially, the Small and Marginal Farmers through social and electronic media. Moreover, the Committee do desire that an App like 'Krishak Mitra' be developed to be used by Small and Marginal Farmers to locate and contact the Custom Hiring Centres/ Farm Machinery Banks in their close vicinity.

#### **REPLY OF THE GOVERNMENT:**

Awareness on the importance of SMAM are created through capacity building and demonstration of new technology machines on the farmers' fields conducted by the Farm Machinery Training & Testing Institutes, *Krishi Vigyan Kendras* (KVKs), Agricultural Technology Management Agency (ATMA), Institutes of Indian Council of Agricultural Research (ICAR), State Agricultural Universities (SAUs), other State and Central Government Agricultural Institutions/Departments and Public Sector Undertakings (PSUs) of Government of India engaged in agricultural activities. A multi-

lingual mobile app-based aggregator platform 'FARMS' (Farm Machinery Solutions) App has also been launched, which facilitates hiring and renting of farm machinery from and by the Custom Hiring Centres/owners of the farm machinery. This mobile app encompasses a fair and transparent rental process while focusing on quality, dependability and timely delivery of the services. So far 74,144 service providers have registered on this app with more than 172,404 machines for renting. More than 524,09,976 farmers/other users have also registered for availing the services through this app.

### **Comments of the Committee**

For comments of the Committee please see Para No. 1.16 of the Report.

### **FARM POWER AVAILABILITY**

#### **Recommendation No. 11**

The Committee observe that there is a linear relationship between availability of Farm power and Farm yield. Therefore, there is a need to increase the availability of farm power from 2.49 KW per ha (2018-19), to 4.0 KW per ha by 2030 to cope up with increasing demand of food grains. About 86% of the total land holdings are in Small and Marginal Size Groups, which need special efforts for its mechanization. The Committee also note that the National (average) Farm power availability is 2.4888 kw.

The Committee note that there is an urgent need to enhance the average farm power availability to minimum 4.00 KW/Ha to assure timeliness and quality in field operations by 2030. The Committee notice that the share of Tractor and Electric Motor in farm power availability increased from 6.8% to 45.8% and 14% to 26.8%, respectively.

The Committee do observe that Agricultural Productivity is directly correlated to farm power (mechanical) availability. Hence, to increase productivity in different crops, the available farm power through mechanization needs to be increased. The Committee further observe that Government is training the farmers for different mechanization in different States through KVKs and providing subsidies for encouraging the availability of machinery to reduce disparity of farm power availability between the States. The ICAR

is having an umbrella MoU with State Agricultural Universities to implement All India Coordinated Research Projects (AICRP) Scheme for locating specific research training centres. The Committee note the wide gap of power availability, for example, Punjab is having 6.011 KW/ha and Mizoram 0.693 (KW/ha). The Committee, therefore, feel that with the increase in power supply to Agriculture, more tasks can be completed at the right time and greater areas can be farmed to produce greater quantities of crops while conserving natural resources along with substantial savings on many fronts. The Committee would like to be apprised of the action taken in this direction.

#### **REPLY OF THE GOVERNMENT:**

The adoption of mechanization by the farmers depends on various factors such as socioeconomic conditions, geographical conditions, crops grown, irrigation facilities etc. There is disparity in achievement of level of mechanization among the States and the issues of such States are being addressed through SMAM being implemented w.e.f. 2014-15 with the objectives of increasing the reach of farm mechanization to small and marginal farmers and to the regions where availability of farm power is low; promoting 'Custom Hiring Centres' and 'Hi-tech Hubs of High Value Machines' to offset the adverse economies of scale arising due to small landholding and high cost of individual ownership. Under this scheme, financial assistance @ 40% to 50% of the cost depending on the categories of farmers, is available for purchase of agricultural machines on individual ownership basis. Financial assistance @40% of the project cost is also available to rural youth & farmer as an entrepreneur, Cooperative Societies of Farmers, Registered Farmers Societies, Farmer Producer Organizations (FPOs) and Panchayats for establishment of Custom Hiring Centres (CHCs) and Hi-tech hubs of high value agricultural machines. Financial assistance @ 80% of the project cost for the projects costing upto ₹10 Lakhs is available to the Cooperative Societies, Registered Farmer Societies, FPOs and Panchayats for setting up of village level Farm Machinery Banks (FMBs). The rate of financial assistance for the North Eastern States for establishment of Farm Machinery Bank is @95% of the project cost.



## **AGRICULTURE RESEARCH SERVICE (ARS)**

### **Recommendation No. 15**

The Committee observe that a centre for 'Agri-electronics and Automation in Agriculture' has been created at ICAR-CIAE, Bhopal and a Department of Sensor and Automation Engineering has been established at ICAR-CIPHET, Ludhiana. A new Agricultural Research Service (ARS) discipline of "Electronics and Instrumentations" for selection of scientists through all India Examination has also been started and the Government is working in these areas with very limited capacities.

The Committee feel that Automation is the need of the hour in Agriculture as it not only improves harvest time and also improves efficiency and productivity both. The Committee, therefore, recommend that the Government should train more engineers in field of Electronics and Instrumentation and for this the recruitment process of ARS should be taken up vigorously to meet the requirement of engineers.

### **REPLY OF THE GOVERNMENT:**

The Agricultural Scientific Recruitment Board (ASRB)-DARE is in the process of recruiting new scientists of discipline Electronics and Instrumentation to improve the automation in agriculture. The ASRB has brought out a notification (vide file no. 1(8)/2023-Exam, dated 17<sup>th</sup> May 2023) for conducting ARS Examination-2023 for recruitment of new scientists under this notification, six posts have been advertised for "Electronics and Instrumentation" discipline.

## **THE NATIONAL INSTITUTE OF AGRICULTURAL ROBOTICS AND ARTIFICIAL INTELLIGENCE (AI)**

### **Recommendation No. 16**

The Committee note that our lands are highly fragmented and will get further smaller and smaller in time to come. Tiny robots and Artificial Intelligence (AI) for Indian Farm Operations in future are urgently needed. A concerted effort with multidisciplinary approach is needed for timely development in this direction. Accordingly, a proposal for the National Institute of Agricultural Robotics and AI has been submitted in the SGoS-8 Vision India-2047, an initiative of Hon'ble Prime Minister of India.

The Committee also feel that opening of National Institute of Agricultural Robotics & Artificial Intelligence is required to keep pace in development in agriculture at National and International level.

**REPLY OF THE GOVERNMENT:**

The proposed initiative in the “SGoS-8 Vision India-2047” to establish the "National Institute of Agricultural Robotics & Artificial Intelligence" is poised to revolutionize India's agriculture sector. Furthermore, there are ongoing efforts to collaborate with private companies to create an academic institute dedicated to advancing Agricultural Robotics & Artificial Intelligence. This initiative promises to significantly impact modern Indian agriculture.

## CHAPTER - III

### OBSERVATIONS/RECOMMENDATIONS WHICH THE COMMITTEE DO NOT DESIRE TO PURSUE IN VIEW OF THE GOVERNMENT'S REPLIES

#### PORTABILITY OF FARM EQUIPMENTS SUITABLE FOR SMALL AND MARGINAL FARMERS

##### **Recommendation No. 3**

The Committee observe that the Small and Marginal Agricultural Land Holdings (less than 2 Hectares) account for 86% of the total Operational holdings *i.e.* 47% of the total operated area. The average farm size in India is small (1.08 Ha). The Committee also observe that the farm machinery is very costly and small farmers find it difficult to purchase these equipments, as they are not in a position to use the equipments due to poor purchasing power. The Committee further note that the Government has introduced custom hiring of farm equipments, wherein a group of farmers can own and share the machines among themselves at mutually agreed charges by maintaining the Farm Machinery Bank.

The Committee also note that Farm Machinery standardization is a multi-ministerial complex issue. Government has to make a concrete policy in order to enforce compatibility/matching *i.e.* interchangeability in the manufacture of Agricultural Implements. Manufacturing of critical Components needs to be standardized and encouraged for mass production by medium and large-scale manufacturers. The Committee further note that it will also help in setting up of ancillary units, which can specialize in the manufacture of these standard Components thus increasing the product spectrum and enhance employment opportunity. The Committee, therefore, recommend the Ministry to find solution to the Multi-ministerial complex issue. The Committee feel that this can be achieved by standardization of design of equipments/attachments at Bureau of Indian Standards (BIS) level and implementation of Standards at the Manufacturer levels and further, testing of equipment / attachment / parts manufactured by different manufacturers for ensuring their adherence to the BIS standards specifications. The availability of standard parts makes production simpler

and improves components/attachments interchangeability and training of manufacturers in manufacturing technology on use of jigs-fixtures, die-punches, templates and other tooling aids for improving quality and compatibility/matching.

The Committee desire the Government to follow up with other allied Government Departments and try to find portability of farm equipments suitable to Small and Marginal Farmers as they are not in a position to buy huge farm equipment and cannot use these equipments in a cost effective way as their land holdings are very small. The Committee would like to be apprised of the concrete and specific action taken by the Department in this regard.

#### **REPLY OF THE GOVERNMENT:**

The scientists of Agricultural Engineering Division, ICAR and officials of DA&FW are actively involved in different Sectional Committee of Bureau of Indian Standards (BIS) to prepare/adopt/modify the standards for agricultural equipment/machines. The BIS has brought out number of Standards or specification for testing and evaluation of farm equipment and machinery which helps in assurance of any product's quality, reliability, portability and safety machines/equipment to the customers. During interaction meetings, the manufacturers are being encouraged to use/manufacture the standard component for manufacturing the equipment/machines to facilitate the interchangeability or replacement of parts. There are already, 4 FMTTI and 38 other DA&FW designated /approved testing Centers at ICAR institutes, SAUs and State Agricultural Departments which are testing the machines and equipment as per these standards and the test reports released by these institutions make the manufacturers clear about performance and durability of the equipment for proper/efficient utilization along with the technical information available to the farmers for proper selection of the required equipment.

Research and Development is an ongoing activity and is being carried out by the Indian Council of Agricultural Research (ICAR). The machines and equipment including those developed for small and marginal farmers are included for financial assistance under the Scheme. Establishment of Custom Hiring Centres and Village Level Farm Machinery Banks are already addressing the issues of reach of farm mechanization to

small and marginal farmers and to the regions where availability of farm power is low. It also helps in offsetting the adverse economies of scale arising due to small landholding and high cost of individual ownership. The Department under scheme Sub-Mission on Agricultural Mechanization since its inception in 2014-15, established more than 43,900 Custom Hiring Centres/Hi-tech Hubs/Farm Machinery Banks for the benefits of farmers.

## **BUDGETARY ALLOCATION FOR PROCUREMENT OF AGRI-EQUIPMENT**

### **Recommendation No. 4**

The Committee note that the Government is helping farmers by providing subsidy to procure machinery to improve farm input and farm power availability. The Ministry has allocated an amount of Rs. ₹5490.82 Crore from the year 2014-15 to 2022-23 for this purpose.

The Central DBT Portal for Agriculture Machinery Mechanization (maintained by DA&FW) has been well received in India as one of the important elements of modernization of Agriculture. The Portal helps in Single Window clearance for approval of equipment/machines procurement of Individual farmer/CHCs. However, present day's electronic agricultural equipments/gadgets probably require clearance of department of electronics as well as DA&FW, which requires to be simplified.

The Committee appreciate the idea of using Direct Benefit Transfer (DBT) Portal as a Single Window clearance for the approval of equipments/machines procurement by Individual farmer/Custom Hiring Centres. However, the Committee notice that for procurement of electronic agricultural equipments/gadgets, clearance of the Department of Electronics is also required. The Committee think that there must be some mechanism software with an automatic link in the DBT Portal for Department of Electronics to facilitate the clearance and approval in one go.

### **REPLY OF THE GOVERNMENT:**

The Department of Agriculture & Farmers Welfare has not come across any such issues that the farmers for purchase of agricultural machines and equipment fitted with the electronic components/gadgets need to take permission from the Department of

Electronics. However, the issues if any will be looked into and resolved in consultation with the Ministry of Electronics and Information Technology.

## **ESTABLISHMENT OF DIRECTORATE OF AGRICULTURAL ENGINEERING**

### **Recommendation No. 7**

The Committee note that at present Directorate of Agricultural Engineering exist in two States (Madhya Pradesh and Tamil Nadu). The Committee also note that ICAR is pursuing the case through the Ministry and the Hon'ble Union Minister had sent a DO letter to all the Chief Ministers of States to establish a Directorate of Agricultural Engineering in their States.

The Secretary, Department of Agricultural Research and Education (DARE) and ICAR Central Institute of Agricultural Engineering are also pursuing the issue through different forum and writing letters to different State Governments. The Committee observe that delivery points at Block and District Levels in case of Agricultural Machinery are almost missing. There is no engineering manpower to demonstrate, train, help in repairs/maintenance and guide farmers at their doorstep. There is an urgent need of Agricultural Engineers at Block and District Levels. The Committee, therefore, recommend that to monitor and implement the government policy and Programme of mechanization more effectively and efficiently, a Directorate of Agricultural Engineering is needed in each State and instead of Sub-scheme on submission of Agricultural Mechanization, Government should have full-fledged Agriculture Mechanization Scheme to accelerate the process. The Committee would like to be apprised of the action taken in this regard.

### **REPLY OF THE GOVERNMENT:**

Madhya Pradesh has a directorate with about three agricultural engineers per district. Tamil Nadu Directorate has around 1029 agricultural engineers located at the regional state offices and at state headquarter. Odisha has 30 districts, and the strength of agricultural engineers is 15 per district. The states which have Directorate of Agricultural Engineering are effectively implementing engineering centric govt. schemes and have better agricultural growth rate. Establishment of the "Directorate of Agricultural

Engineering" in state will strengthen agricultural mechanization, post-harvest processing, soil and water conservation & energy in agriculture. The matter is being pursued with state governments for establishment of Directorate of Agricultural Engineering in the state. One more letter has been written by Hon'ble Minister of Agriculture and farmers Welfare Shri Narendra Singh Tomer jee (vide letter no. A. Engg. 14/93/2023-AE, dated 16.08.2023) to the Chief Minister of the states to establish "Directorate of Agricultural Engineering and create post of Agricultural Engineers at block and district level" to achieve mechanization goal at faster rate.

On the recommendation of the Expenditure Finance Committee (EFC), the Submission on Agricultural Mechanization (SMAM) has been merged with *Rashtriya Krishi Vikas Yojana* (RKVY).

## **PROMOTION OF RURAL ENTREPRENURSHIP**

### **Recommendation No. 12**

The Committee note that the high-cost farm machinery is capital intensive and majority of Indian farmers are not able to acquire these assets. The Committee also note that matching equipment for tractors, power tillers and other prime movers are either not available or farmers are forced to make inappropriate selection in the absence of proper guidance, resulting in high input cost of production.

The Committee also note that the quality and after sales service of farm machinery are the other concerns as the majority of farmers are cost conscious. There are inadequate service centers for proper up-keep of the machinery. In addition, the inability of local low cost manufacturers to come up to the levels of standard designs of equipment also poses a big challenge to Farm Mechanization.

The Committee also find that a software i.e. Mobile App Krishi Yantra Mitra has been developed for Agro-climatic Zone wise, which should be given wide publicity and its benefit conveyed to all the farmers. Further, the Committee desire that in order to improve the quality of the machines and reduce frequent breakdowns, testing centres for the commercial machines/equipment as per BIS standards specifications should be

set up in all parts of the country. ICAR Institutes and manufacturers of farm equipment should have interaction at regular intervals to ensure that manufactures get information on new developments in the field.

The Committee are of the considered opinion that there is an urgent need to promote Rural Entrepreneurship for rural employed youth who are either under employed or unemployed. Keeping into account a huge demand for skilled workers in rural area particularly in Agro and Allied business thrust is needed on Agri-entrepreneurship so that job opportunities are created and made available to these rural unemployed youth. The Committee think that it will reduce migration of rural people to urban areas in research of job and promote rural development by way of employment in villages itself to a great extent.

#### **REPLY OF THE GOVERNMENT:**

Institute and research centres of the All-Indian Coordinated Research Project on Farm Implement and Machinery have been conducting interaction meeting with farm machinery manufacturers regularly to share information about newly development equipment/technologies. During last five-year, 47 improved equipment/technologies have been commercialized. A meeting cum visit of All India Agricultural Machinery Manufacturers Association (AMMA-India) has been planned at ICAR-CIAE Bhopal on 25 September, 2023 and information about newly developed machinery will be shared with the participating farm machinery manufacturers.

Four Farm Machinery Training & Testing Institutes (FMTTIs) of Department of Agriculture & Farmers Welfare and Institute ICAR-CIAE, Bhopal are organizing various training programmes to improve farm mechanization. The training courses are designed to accommodate participants from varied backgrounds such as rural youth/farmers, trainers, academicians, officials of state Governments, entrepreneurs, manufactures and apprentices from industries and colleges. Some training programmes at FMTTIs and Institute have been aligned with the National Skill Qualification Framework under the National Skill Development Mission with the aim of imparting employable skills.



In order to hasten the process of testing of agricultural machinery, Department of Agriculture & Farmers Welfare has authorized 38 different institutes/centres across the country under ICAR/State Governments/SAUs for testing of agricultural machines and equipment apart from the 4 Farm Machinery Training & Testing Institutes (FMTTIs).

## CHAPTER - IV

### OBSERVATIONS/ RECOMMENDATIONS IN RESPECT OF WHICH REPLIES OF THE GOVERNMENT HAVE NOT BEEN ACCEPTED BY THE COMMITTEE

#### STATUS OF AGRICULTURE MECHANIZATION IN INDIA

##### Recommendation No. 1

The Committee note that Agriculture Mechanization is essential to modern agriculture to increase the productivity and for making judicious and cost-effective use of inputs like seeds, fertilizers, chemicals & pesticides and natural resources like water, soil nutrients, etc. The Committee also note that for the purpose, the Government have undertaken several developmental Programmes, Schemes, reforms at policy level with the intent and focus to increase employment and income of the farmers.

The Committee further note that India accounts for only about 2.4% of the World's geographical area and 4% of its water resources, but has to support about 17% of the world's human population and 15% of the livestock. Agriculture is an important Sector of the Indian economy, approximately accounting for 20% of the Nation's GDP. The Committee also note that Agriculture in India is currently growing at an average Compound Annual Growth Rate (CAGR) of 2.8%. About half of the population relies on agriculture as its principal source of income.

The Committee note that the overall Agriculture Mechanization Level of the country is 47% which is comparatively lower than that of other developing countries such as China (59.5%) and Brazil (75%). Farmers need complete mechanization package for major crops. The Committee also note that contribution of Agricultural Mechanization in India leads to saving in seed 15-20%, in fertilizer 15-20%, improvement in germination rate 7-25%, saving in time 20-30%, in weed 20-40% in labour 20-30%, increase in cropping intensity 5-20% and increase in crop yield 13-23%.

There are 86% Small and Marginal Farmers having less than 2 Hectare of land holdings. Unless machines appropriate for small holdings are made available or substantial farm amalgamation takes place, it is difficult for the Small and Marginal

Farmers to purchase their own machinery. The Committee desire that Farm Machinery for majority of the farmers, who are Small and Marginal Farmers and who do not have adequate funds to purchase capital intensive implements should be developed and further incentivized.

The Committee have been apprised of the fact that if we compare our country with the developed nations then till date on an average only 47% Agriculture Mechanization has been done and it is expected that another 25 years are required to achieve the level of 75-80% mechanization from the present level of 47%. The Government has taken various initiatives and is helping farmers by providing subsidy to procure machinery to improve farm input and farm - power availability.

The Committee do feel that economic growth in Indian Agricultural Sector lags behind the parallel growth in Industry and Services Sector, creating an ever widening rural-urban income disparity. The Agricultural Mechanization plays a key role in improving agricultural production, productivity and efficiency. The Committee, therefore, recommend that the Government should strive hard to promote Agricultural Mechanization by according priority for development of small equipments/machines for Small and Marginal Farmers as there is an urgent need to bring in quality and value addition of the farm produce enabling the farmers to take second and subsequent crops making agriculture more attractive and profitable. Apart from this the Committee strongly desire that the Government must strive hard to achieve a level of 75% in farm mechanization from the present level of 47% in a much shorter period than that which has been stated by the Department to be 25 years.

#### **REPLY OF THE GOVERNMENT:**

Some ICAR Institutes and Centres of the All India Coordinated Research Project (AICRP) are engaged in research and development of the equipment/machines for mechanization of agricultural production and post-production activities for small and marginal farmers. The improved implement and machinery operated small tractor and power tiller are also developed for field and horticultural crops. The developed equipment/ technologies are being commercialized and transferred to potential stakeholders. The average size of operational holdings is shrinking in all States and the

percentage of marginal, small and semi-medium operational holdings is increasing due to continuing fragmentation of land which is making individual ownership of agricultural machinery progressively more difficult. Smaller and fragmented land size is not suitable for mechanized operations and therefore there is regional disparity in the level of farm mechanization. Inadequacy of skilled manpower for operation, repair and maintenance of Tractors, Power tillers, Combines Harvesters and other Tractor & self-propelled agricultural Machinery is another area of concern. However, the Department of Agriculture & Farmers Welfare is actively boosting mechanization levels by implementing the Sub-Mission on Agricultural Mechanization (SMAM) to overcome existing constraints in agriculture.. The primary focus is to establish block-level custom hiring service infrastructure with comprehensive machinery sets for all major crop operations in the respective regions The Cooperative Societies of Farmers, Farmers Producer Organizations (FPOs), Self Help Groups (SHGs), Panchayats are supported with higher rate of financial assistance for establishment of Farm Machinery Banks at village levels. So far, farm machinery and equipment are available to the small and marginal farmers on rental basis as per their requirements. The availability of Custom Hiring Centres (CHCs)/Village Level Farm Machinery Banks (FMBs) are being increased through the Aspirational Districts Programme by way of establishing at least 2 CHCs/FMBs in each block in the identified aspirational districts to address the regional disparity in level of mechanization. It will also address the issues of timely availability of appropriate machinery to the farmers engaged in underdeveloped regions of the country. Focus is also towards creating infrastructure of post-harvest processing and value addition through women Self Help Groups so that the facilities are available at the farmgate. The Institute ICAR-CIAE, Bhopal; 25 centres of the AICRP on Farm Implement and Machinery (FIM); and four of Farm Machinery Training and Testing Institutes (FMTTIs) at Budni (MP), Hisar (Haryana), Anantapur (Andhra Pradesh) and Biswanath Chariali in Assam, are imparting skill-oriented training in the area agricultural mechanization to various groups of beneficiaries like Farmers, Rural Youth technicians, undergraduate Agriculture /Mechanical, Diploma holder in ITI trade Certificate in Tractor/agricultural Machinery operators /technician, Management /Supervisory level trainees from Government sectors and industries, etc. The existing capacity of all four FMTTIs has been increased and the existing infrastructure is also being augmented to

meet the increasing demand. All these initiatives will help in increasing the level of mechanization at a faster pace.

### **Comments of the Committee**

For comments of the Committee please see Para No. 1.7 of the Report.

### **LOW HORSE POWER TRACTORS**

#### **Recommendation No. 14**

The Committee note that the Tractors are most important Machines for Agriculture as these performs various farm operations. The selection of Horse Power for Tractor depends upon the size of the land and farm applications. The Committee note that the average farm size in India is small (1-08ha) and the small and marginal holdings of less than 2 Hectares account for 86% of the total operational holdings. The Committee feel that for Small and Marginal Farmers buying the Farm Equipments even after subsidy is very expensive. The Committee also note that Tractor parts and Components attract GST of 12%. The Committee, therefore, recommend that GST for Tractor parts and components be reduced suitably for the Tractors upto 40 hp. in order to bring down the cost of such Tractors. The Committee feel that this will not only help the Small and Marginal Farmers but also provide the much needed succour to them for buying the most important Farm equipment.

#### **REPLY OF THE GOVERNMENT:**

The GST rate slabs are decided by the GST Council. The Ministry of Agriculture & Farmers Welfare since 2017 is continuously pursuing reduction/rationalization in the GST rates for agricultural machines and equipment including tractors, power Tillers and Combine Harvesters.

### **Comments of the Committee**

For comments of the Committee please see Para No. 1.19 of the Report.

## CHAPTER - V

### OBSERVATIONS/ RECOMMENDATIONS IN RESPECT OF WHICH FINAL REPLIES OF GOVERNMENT ARE STILL AWAITED

#### SOIL PLANT ANALYSIS DEVELOPMENT (SPAD)

##### Recommendation No. 13

The Committee observe that with regard to development in precision and robotic machines, the Department had made Soil Plant Analysis Development (SPAD) Meter for checking Nitrogen status and spectral reflectance based variable application system developed by ICAR - Central Institute of Agricultural Engineering, Bhopal. The Committee also note that the SPAD Meter is a hand held low cost instrument and single button press will give readings. Further, Advisory Services/ User Manual will be provided by KVKs or Block Level Agencies/manufacturers. The Committee further note that the Department has given license to manufacturers for manufacturing the SPAD Meter to be made available in the market for different stake holders.

The Committee would like to be apprised of by when the manufacturers who have been awarded license will start manufacturing of the SPAD Meter and sell the same in the open market. The Committee feel that the SPAD Meter will be a boon to farmers especially Small and Marginal Farmers. The Committee desire the Machines (SPAD Meter) to be made cost effective.

#### REPLY OF THE GOVERNMENT:

The manufacturer is conducting own experiments on different crops for building database for comparison of results. The manufacturer is demonstrating the hand-held device at various exhibitions/*krishi melas* and various state departments for generating demand. The manufacturer is ready to launch the SPAD meter in due course.

New Delhi  
06 February, 2024  
17 Magha, 1945 (Saka)

**P.C. GADDIGOUDAR**  
Chairperson  
Standing Committee on Agriculture,  
Animal Husbandry and Food Processing

**Standing Committee on Agriculture, Animal Husbandry and Food Processing  
(2023-24)**

**Minutes of the Fifth Sitting of the Committee**

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The Committee sat on Tuesday, the 06<sup>th</sup> February, 2024 from 1500 hrs. to 1530 hrs. in the Office of Chairperson, Room No. 103, Block-B, Extension to Parliament House Annexe, New Delhi.

***Present***

Shri P. C. Gaddigoudar – Chairperson

***Members***

***Lok Sabha***

2. Shri Horen Sing Bey
3. Shri Kanakmal Katara
4. Shri Mohan Mandavi
5. Smt. Sharda Anilkumar Patel
6. Shri Bheemrao Baswanthrao Patil
7. Shri Shrinivas Dadasaheb Patil
8. Shri Devendra Singh *alias* Bhole Singh
9. Shri Ram Kripal Yadav

***Rajya Sabha***

10. Smt. Ramilaben Becharbhai Bara
11. Shri Masthan Rao Beedha Yadav
12. Dr. Anil Sukhdeorao Bonde
13. Shri Kailash Soni
14. Shri Ram Nath Thakur
15. Shri Vijay Pal Singh Tomar
16. Shri Harnath Singh Yadav

**Secretariat**

- |    |                          |   |                      |
|----|--------------------------|---|----------------------|
| 1. | Shri Shiv Kumar Wadhawan | – | Additional Secretary |
| 2. | Shri Khakhai Zou         | – | Director             |
| 3. | Shri Prem Ranjan         | – | Deputy Secretary     |
| 4. | Shri Anil Kumar Sanwaria | – | Deputy Secretary     |

2. At the outset, the Chairperson welcomed the Members to the Sitting of the Committee. Thereafter, the Committee took up for consideration and adoption of Draft Reports on the following Subjects:

- \* (i) xxxx          xxxx                                  xxxx                                  xxxx
- \* (ii) xxxx          xxxx                                  xxxx                                  xxxx
- \* (iii) xxxx          xxxx                                  xxxx                                  xxxx

(iv) Action Taken Report on the Fifty-Eighth Report (Seventeenth Lok Sabha) on the Subject 'Research and Development in Farm Mechanization for Small and Marginal Farmers in the Country' pertaining to the Ministry of Agriculture and Farmers Welfare (Department of Agricultural Research and Education)

3. After some deliberations, the Committee adopted the Draft Reports without any modification. The Committee also authorized the Chairperson to finalize and present the Report to Parliament.

***The Committee then adjourned.***

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\*Matter not related to this Report



(Vide Para 4 of Introduction of the Report)

*ANALYSIS OF ACTION TAKEN BY GOVERNMENT ON THE OBSERVATIONS / RECOMMENDATIONS CONTAINED IN THE FIFTY-EIGHTH REPORT (17<sup>TH</sup> LOK SABHA) OF THE STANDING COMMITTEE ON AGRICULTURE, ANIMAL HUSBANDRY AND FOOD PROCESSING (2023-24)*

(i)	Total number of Recommendations	16
(ii)	Observations/ Recommendations that have been Accepted by the Government Para Nos. 2,5,6,8,9,10,11,15 and 16 Total Percentage	09 56.25%
(iii)	Observations/ Recommendations which the Committee do not desire to pursue in view of the Government's replies Para Nos. 3,4,7 and 12 Total Percentage	04 25%
(iv)	Observations/ Recommendations in respect of which replies of the Government have not been accepted by the Committee Para Nos. 1 and 14 Total Percentage	02 12.50 %
(v)	Observations/ Recommendations in respect of which Final replies of the Government are still awaited Para No. 13 Total Percentage	01 06.25%