COMMITTEE ON AGRICULTURE
(2011-2012)

27

FIFTEENTH LOK SABHA

MINISTRY OF AGRICULTURE
(DEPARTMENT OF AGRICULTURE & CO-OPERATION)

'DEFICIENT MONSOON AND STEPS TAKEN BY THE GOVERNMENT TO MITIGATE ITS IMPACT ON AGRICULTURE SECTOR'

{Action Taken by the Government on the Observations/ Recommendations contained in the Eleventh Report (Fifteenth Lok Sabha) of the Committee on Agriculture (2009-2010)}

TWENTY SEVENTH REPORT

LOK SABHA SECRETARIAT
NEW DELHI

December, 2011/Agrahayana, 1933 (Saka)

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Presented to Lok Sabha on 19.12.2011

Laid on the Table of Rajya Sabha on 19.12.2011

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INTRODUCTION

I, the Chairman, Standing Committee on Agriculture (2011-2012) having been authorized by the Committee to submit the report on their behalf, present this Twenty Seventh Report on Action Taken by the Government on the Observations/Recommendations contained in the Eleventh Report of the Committee on "Deficient Monsoon and Steps taken by the Government to Mitigate its Impact on the Agriculture Sector".

2. The Eleventh Report of the Committee on Agriculture (2009-2010) on "Deficient Monsoon and Steps taken by the Government to Mitigate its Impact on the Agriculture Sector" was presented to the Hon'ble Speaker on 13 July, 2010 and subsequently presented to Lok Sabha and laid on the table of Rajya Sabha on 03 August, 2010. The Action Taken Replies on the Report were received on 16 May, 2011.

3. The Report was considered and adopted by the Committee at their Sitting held on 14 December, 2011.

4. An analysis of the Action Taken by the Government on the Observations/Recommendations contained in the Eleventh Report of the Committee is given in **Annexure- VII**.

NEW DELHI;
15 December, 2011
24 Agrahayana, 1933 (Saka)

BASUDEB ACHARIA
Chairman,
Standing Committee on Agriculture

CHAPTER I

Report

This Report of the Committee on Agriculture deals with the action taken by the Government on the Recommendations contained in the Eleventh Report (Fifteenth Lok Sabha) of the Committee on Agriculture on 'Deficient Monsoon and steps taken by the Government to mitigate its impact on Agriculture Sector' which was presented to the Hon'ble Speaker on 13 July, 2010 and subsequently presented to Lok Sabha and laid on the Table of Rajya Sabha on 3 August, 2010.

2. The Ministry of Agriculture (Department of Agriculture & Co-operation) have furnished Action Taken Replies in respect of all the 18 recommendations/observations contained in the Report. These have been categorised as under:

(i) Observations/Recommendations that have been accepted by the Government :
Recommendation Nos. 3.50, 3.51, 3.58, 3.59, 3.60, 3.61, 3.63, 3.64, 3.65, 3.66 and 3.67

(ii) Observations/Recommendations which the Committee do not desire to pursue in view of the Government's reply:
Recommendation Nos. Nil

(iii) Observations/Recommendations in respect of which action taken replies of the Government have not been accepted by the Committee
Recommendation Nos. 3.52, 3.53, 3.54, 3.55, 3.56 and 3.57

(iv) Observations/Recommendations in respect of which final replies of the Government are still awaited.
Recommendation Nos. 3.62.

3. The Committee trust that utmost importance would be given to implementation of the observations/recommendations accepted by the Government. In cases, where it is not possible for the Department to implement the Recommendations in letter and spirit for any reason, the matter should be reported to the Committee with reasons for non-implementation. The Committee desire that further Action Taken Notes on the Observations/Recommendations contained in Chapter-I and Chapter V of this Report be furnished to them at an early date.

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

NATIONAL SEED BANK
(Recommendation Para Nos. 3.52, 3.53, 3.54 and 3.55)

5. The Committee while noting that during Kharif 2009, deficient South West Monsoon necessitated relaxation of seed standards and increased subsidy on seeds observed that just as grain reserves are important for food security, seed reserves are essential for crop security. The number of mini-kits of seeds provided under various Schemes was also enhanced.

They further observed that split second response to natural calamities in a vast country like India is possible only when a detailed mapping of alternate cropping pattern is undertaken and desired that such an exercise be carried out by the Government with due diligence and promptitude so that in any such future eventuality, crucial days of sowing are not lost in futile and unrealistic planning.

Noting that climate changes are quick and difficult to predict, they recommended the Government to take measures to ensure enough buffer stock of seeds to cater to contingency situations. Preservation of seeds by agencies other than that of the Government, including individual farmers is to be promoted.

They also strongly felt that establishment of a National Seed Bank shall go a long way in ensuring availability of seeds on a priority basis and therefore desired that the Scheme of Seed Villages being implemented in 60,000 villages be expanded at the earliest to cover all villages of the Country so that seed availability is decentralized without any further delay.

6. The Department of Agriculture & Cooperation in its reply to these recommendations stated that State Governments are primarily responsible for production and distribution of certified/quality seeds to farmers during normal as well as during natural calamities and unforeseen conditions. State Governments make arrangements for production and distribution of seeds to farmers, through State Department of Agriculture, State Seeds Corporation, NSC, SFCI and private institutions. However, Government of India reviews situation of availability of seeds in advance during each Kharif and Rabi Season and issues necessary guidelines for ensuring adequate stocks and procurement of seeds, by State Government and other agencies.

However, 'Establishment and Maintenance of Seed Bank' component of Central Sector Scheme "Development and Strengthening of Infrastructure facilities for production and distribution of quality seeds" has been under implementation by this Department since 1999-2000 onwards through National

Seeds Corporation (NSC), State Farms Corporation of India (SFCI) and State Seeds Corporations (SSCs). Seed Stocks reserved under seed bank are utilized to meet exigencies like drought, floods etc. Farmers are not directly maintaining seed banks but are ultimate beneficiaries under Seed Bank Scheme.

All implementing agencies are advised to maintain seeds of only short and medium duration, late sowing varieties of different crops having adaptability in respective States. Varieties (under calamities situations) are selected by Seed Corporation for various contingencies from contingency plans, prepared in consultation with State Department of Agriculture, Indian Council of Agricultural Research (ICAR) or Agriculture Universities.

7. The Committee note that while bunching the recommendations together on the topic of National Seed Bank, the reply of the Government has not addressed many aspects contained in the above paragraphs. The Committee are well aware of the fact that Agriculture is a State Subject and primary responsibility in the matter rests with State Governments and with that in view only they desired the Government of India to become more pro-active in times of natural calamities like drought and floods and recommended certain measures which when implemented would go a long way in mitigating the plight of farmers in times of drought. They, however, find that the aspects of detailed mapping of alternate cropping patterns, the establishment of a National Seed Bank, extension of the Scheme of Seed Villages throughout the country to decentralise availability of seeds and measures taken to

promote preservation of Seeds by other than State agencies including individual farmers all of which are important aspects of the availability of seeds in calamitous conditions, have remained unanswered. They, further note that the achievements of physical targets set for seeds during the period 2006-07 to 2010-11 have been below the targets throughout this period while the financial assistance released in the corresponding period amounts to Rs. 29.34 crore. They, therefore, reiterate their earlier recommendation of establishment of an exclusive Seed Bank at the national level as it is felt that the 'Establishment and Maintenance of Seed Bank' as a component of the Central Sector Scheme is not yielding the desired results. They expect the Department to furnish full and complete replies to their recommendations in future. They also desire to be apprised of the action taken with regard to the aspects that remained unanswered or partially answered at the earliest.

FODDER POLICY
(Recommendation Para Nos. 3.56 & 3.57)

8. The Committee noted that during the drought situation of Kharif 2009, the Government provided fodder mini-kits to avoid any shortage and allowed Rashtriya Krishi Vikas Yojana funds to be used for purchase of fodder seeds to ensure that drought affected farmers don't resort to distress sale of animals, as sustenance of livestock can form an integral part of the strategy to tackle effects of drought by crop-livestock integrated farming. However, having noted that at the ground level there is still a lot of avoidable fodder loss due to bulk harvesting machines and perturbed by the alarming shrinking of land used for

growing of fodder and grazing of cattle, the Committee recommended for formulation of National Fodder Policy without any further delay.

9. The Department of Agriculture and Co-operation have stated that the National Policy for Farmers (NPF), 2007 inter alia, provides for attention to animal feed including fodder. In pursuance to NPF, 2007, Government of India announced "Accelerated Fodder Development Programme (AFDP)" in GOI's Budget 2011-12 for increasing income of farmers, dependent on livestock. The programme envisages accelerating production of fodder through promotion of integrated technologies and processes for enhancing availability of fodder throughout the year. The strategies include production of quality seeds, production of fodder and adoption of appropriate technologies for Post-Harvest Management. The programme will be implemented on location specific approach in twelve States, viz., Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Tamil Nadu and Uttar Pradesh, as a sub-scheme of Rashtriya Krishi Vikas Yojana (RKVY) during 2011-12 with allocation of Rs. 300 crores.

10. Notwithstanding the explanation put forth by the Department, the Committee are of the firm opinion that until and unless the Government formulates the National Fodder Policy at the earliest, the perennial problem of shrinking of grazing lands as well as land used for growing fodder will show no signs of ebbing. This problem gets compounded during times of natural calamities like drought when farmers face a serious threat to their sustenance and resort to distress sale of their animals to be able to survive during those harsh times. If provided with

adequate amount of fodder during natural calamities, the farming community would be in a position to sustain themselves via crop – livestock integrated farming. Taking this vital fact into consideration, the Committee reiterate their earlier recommendation that even though the National Policy on Farmers - 2007 pays attention to animal feed including fodder, much remains to be done to make fodder available in times of natural calamities like droughts and floods and therefore urge the Government to formulate a National Fodder Policy in real-quick time and not just rely on stop-gap arrangements as is in vogue.

AGRICULTURAL CREDIT
(Recommendation Para No. 3.61)

11. The Committee noted that all States had complied with the RBI guidelines of conducting State Level Banker's Committee (SLBC) meetings to provide relief to farmers in view of the drought. They had further noted that as proposed by the Finance Minister in the General Budget 2010-11 the period of repayment of loan by farmers under "The Debt Waiver and Debt Relief Scheme for Farmers" had been extended till 30 June, 2010. However, observing that such one time measures were not capable of providing the requisite relief to farmers, they had recommended that there should be a specific Credit Relief Plan, which should come into operation automatically in case of natural calamities like flood & drought to provide credit relief to farmers especially the small and marginal ones.

12. In their Action Taken Notes, the Department have stated that Reserve Bank of India is operating an action plan for providing credit relief to the farmers in event of occurrence of natural calamities, through issue of standing guidelines. Guidelines issued by Reserve Bank of India (RBI) to the banks for providing relief, are effective automatically for farmers in areas affected by natural calamities and are issued to enable the banks to take uniform and concerted action expeditiously, particularly to provide financial assistance to the farmers. Salient features of the guidelines are as under:

- District Consultative Committees of affected districts are required to meet immediately after occurrence of natural calamities.
- In event of calamity covering a larger part of a State, State Level Bankers' Committee will also convene a meeting.
- As per guidelines, immediate credit facilities are given for protecting and rejuvenating standing crops/orchards/plantation etc.
- Credit for grains and fodder storage structures, drainage, pumping and other measures and operations to repair pump sets, motors, engines and other necessary implements, is also given.
- Principal amount of short-term loan as well as interest due for repayment in year of occurrence of natural calamity is converted into term loan.
- Repayment period of restructured term loan varies depending on severity of calamity and its recurrence, extent of loss of economic assets and distress caused.
- Generally, restructured period of repayment is 3 to 5 years extendable upto 7 years and in extreme cases of hardship upto a maximum period of 10 years.
- In all cases of restructuring, moratorium period of at least one year should be considered.
- Further, banks should not insist for additional collateral security for such restructured loans.

13. The Committee note with satisfaction that the Reserve Bank of India is operating a Plan for providing credit relief to farmers in the event of occurrence of natural calamities through issue of standing guidelines, which are effective automatically for farmers in areas affected by natural calamities so as to enable the banks to take uniform and concerted

action expeditiously. What perturbs the Committee is that in spite of these RBI guidelines, their implementation proper leaves much to be desired as farmers have to go through a myriad of processes and cumbersome procedures before they finally receive some financial support to help them tide over the crisis brought about by natural calamities. It is precisely these bottlenecks which force farmers to knock at the doors of private moneylenders who by virtue of their informal and speedy disbursal of credit force farmers into the vicious and never ending debt cycle from which they get no respite. The Committee, therefore, urge all concerned Government agencies to ensure that guidelines of RBI are followed in letter and spirit thereby enabling farmers to easily obtain institutional credit in times of natural calamities.

SOIL HEALTH
(Recommendation Para No. 3.62)

14. The Committee had wondered as to what purpose the new scheme of Nutrient Based Fertilizers Scheme launched from 1 April, 2010 would serve in the absence of authentic data on soil fertility. They also felt that the Government have not responded with the alacrity it deserves to the serious problem of deterioration of soil health of the entire cultivable area in the Country brought about by unscientific agricultural practices, depleting water resources, excessive/indiscriminate use of fertilizers and pesticides, deforestation etc. They, therefore, recommended the Government to get down to the task of completing Soil Health Cards Scheme in co-ordination with the State Governments and their own field institutions with utmost urgency. They

were hopeful that once this is done the NBS would also be implemented in a more professional and purposeful manner.

15. The Department in their Action Taken Notes have stated that Government of India is promoting the concept of balanced use of fertilizers and also advocating concept of soil test based fertilizer use to maintain soil health for increased productivity. National Project on Management of Soil Health and Fertility (NPMSH&F) was launched during 2008-09 with objective of setting up and strengthening Soil Testing Laboratories (STLs), promoting Integrated Nutrient Management (Organic manure, soil amendment and micronutrients) and strengthening of Fertilizer Quality Control Laboratories with envisaged outlay of Rs. 429.85 crores during 11th Five Year Plan. During first three years of implementation, 124 new static Soil Testing Laboratories (STLs), 116 new Mobile STLs and strengthening of 155 existing STLs has been sanctioned under the scheme. Setting up/strengthening of STLs is the first step to issue soil health cards to the farmers.

In order to promote application of balanced used of fertilizers, Indian Institute of Soil Science (IISS), Bhopal under Indian Council of Agricultural Research (ICAR) was sanctioned Rs. 10.32 crores under scheme "National Project on Management of Soil Health & Fertility" for preparation of "Geo-Referenced Soil Fertility Maps" including interlinking of soil fertility status with Soil Test Crop Response data to generate site specific recommendations in 19 major States (171 Districts). ICAR has already collected GPS based soil samples in 18 States and analysis of samples is in progress. IISS, Bhopal with help of soil test data of State Department of Agriculture, GIS based soil

fertility maps of NPK for 21 States at district level and 12 States at tehsil level have been prepared for NPK. The maps are available for public domain at website www.iiss.nic.in.

16. The issue of deteriorating soil health and steps for its control is one issue vociferously espoused by the Committee, while impressing upon the Government to expeditiously undertake soil testing all over the Country and subsequently issue Soil Health Cards to the farmers. However, much to their chagrin, the Government is lagging way behind in this aspect and Soil Health Cards for farmers is still a distant dream, leaving the Committee to ponder over the efficacy of the Nutrient Based Fertilizers Scheme launched by the Government from 1 April, 2010. They are also constrained to note that reply to this recommendation is also silent on the number of Soil Testing Laboratories (STL), Mobile STLs set up and STLs strengthened out of those sanctioned under the Scheme NPMSH&F for which a sum of Rs. 429.85 crores was the envisaged outlay during the Eleventh Plan. Similarly, they find that no time frame has been set for IISS, Bhopal to complete the task of "Geo-Referenced Soil Fertility Maps'. Also, no time bound action is being taken to prepare GIS based soil fertility maps of NPK for remaining states at district and tehsil levels. They note with satisfaction that finally the States have realized the importance of soil testing and are working towards restoring its health. They, therefore, urge upon the Government to conduct soil testing across the Country in a time-bound manner, issue Soil Health Cards to all farmers and based on the results of these tests draw up

measures to improve the soil health. They are of the firm opinion that once this exercise is carried out, the Nutrient Based Subsidy Scheme could be implemented in a more professional and purposeful manner and thereby contribute towards increased agriculture production in the Country and thus providing food security to the nation. They desire to be apprised of the progress made in the setting up of STLs, mobile STLs and strengthening of STLs so far along with the expenditure incurred in respect of each, year-wise, during the Eleventh Plan.

CHAPTER II

RECOMMENDATIONS/OBSERVATIONS WHICH HAVE BEEN ACCEPTED BY THE GOVERNMENT

CONTINGENCY PLANS FOR NATURAL CALAMITIES
(Recommendation Para Nos. 3.50 & 3.51)

The Committee note that general State specific contingency plans for specific agro-climatic conditions were prepared by Central Research Institute for Dryland Agriculture (CRIDA), Hyderabad and ICAR Research Institute for Eastern Region, Patna. Based on this and on the State Specific Drought Management Strategies provided by the National Rainfed Area Authority (NRAA), States prepared the Contingency Plans for catch crops during Kharif 2009. The Committee further note that Indian Council of Agricultural Research (ICAR) is preparing district-wise contingency plans for Agriculture and Allied Sectors for different Agro Climatic Zones, to meet adverse eventualities arising due to extreme climatic variabilities (droughts, floods, heat waves, cold waves etc.). ICAR is soliciting participation of State Agriculture Universities (SAUs) and Line Departments of different States of the country. The Committee expect that, as being contemplated by the Government, contingency plans based on all the 127 Agro-Climatic Zones (demarcated according to their weather patterns and farming systems) would have been ready for utilisation by Kharif, 2010.

Notwithstanding the above-cited endeavours of Government, the Committee find it highly perturbing that till date the Government have no National Contingency Plan for Drought and other such natural Calamities. More so, when the cataclysmic changes resulting from global warming and climate change are relentlessly manifesting themselves in substantial measures. It should dawn upon the Government at least now that the times of kneejerk reactions to individual drought or any other such natural calamity are long past. With its unpredictability of occurrence and the areas affected, the drought of 2009 should serve as an eye opener for the Government. Several

areas which were drought prone got ample rains this time, while several flood prone or abundant rain areas were singed by the drought of 2009. It is, therefore, imperative that a National Contingency Plan for such eventualities be worked out immediately and kept in readiness for any such future eventuality. The Contingency Plans for the 127 Agro-Climatic Zones being worked out should be factored into this National Contingency Plan for facilitating micro level implementation as and when the situation arises.

Reply of the Government

Government of India prepared National level Contingency Agriculture Plan for Kharif 2010 and issued necessary guidelines to State Governments for preparation of Crop Plans for three scenarios excess, normal and less of rainfall conditions. This Contingency Plan is valid for next three years (A copy of the Contingency Agriculture Plan for Kharif 2010 is at **Annexure-I**). Guidelines include meteorological Sub-Division-wise and State-wise crop varieties and options for different situations in rainfed areas of agro-eco regions. States are encouraged to prepare state / district specific plans; based on requirement, assessment of agro-climatic conditions prevailing and resources available to put into action such specific plans. Central Research Institute for Dryland Areas (CRIDA), an ICAR institution, is helping States in preparation of District-wise Contingency Plan with Support of State Agriculture Universities (SAUs). District-wise Plans for certain districts of Andhra Pradesh, Gujarat, Karnataka, Maharashtra, Rajasthan and Tamil Nadu is now available on website of this Department www.agricoop.nic.in.

(Vide Ministry of Agriculture (Department of Agriculture & Co-operation), Drought Management Division Letter No. 17-1/2009-DMC dated 16 May, 2011).

RAINFED AREA FARMING
(Recommendation Para Nos. 3.58, 3.59 & 3.60)

The Committee are aware that sixty percentage of area under cultivation in India is rainfed, but contributes only around 45% of total agricultural production. The crippling dependence on rain renders these areas perennially vulnerable to weather related exigencies like drought, etc. Hence, it is natural that crops grown in these areas like pulses and oilseeds see a drop in production, which ultimately leads to situations like misery to farmers, price escalation, costly imports of agricultural produce, etc.

It is, however, a matter of great regret that Schemes like the Rainfed Area Development Programme (RADP) proposed for initialization in the Eleventh Plan have not yet taken off owing to procedural delays and delays due to poor planning / conceptualization that has led to last minute restructuring and revision of the Scheme. The Committee have drawn attention of the Government to the need for initiatives like RADP to be taken up on war footing basis to improve rainfed agriculture in the Country in their several previous Reports. However, nothing significant seems to have happened on this front as the drought during Kharif 2009 saw all the problems of these areas unfolding as in the past. Therefore, even at the cost of sounding repetitive the Committee recommend that development of rainfed areas in the Country needs to be assigned top priority by the Government. A very welcome first step in this direction would be the finalization and implementation of RADP, without any further loss of time.

The Committee are also of the opinion that post-harvest infrastructure, marketing and pricing, etc. are also areas that cry for urgent attention. Even the slightest of improvements in these areas can make cultivation of several crops like pulses, etc. more remunerative for the farmer. The Government should, therefore, chalk out fresh strategies on these fronts without any further delay.

Reply of the Government

To address various problems of rainfed areas and to ensure evolving a coordinated strategy for integrated development, watershed programmes are being implemented by Ministry of Agriculture and Ministry of Rural Development in terms of Common Guidelines published by National Rainfed Area Authority (NRAA). National Rainfed Area Authority under administrative control of Planning Commission has been constituted for focused monitoring of implementation of various schemes in rainfed areas. Besides, programmes like Rashtriya Krishi Vikas Yojana (RKVY), Macro Management of Agriculture (MMA), National Horticulture Mission (NHM), National Food Security Mission (NFSM), National Mission on Micro Irrigation (NMMI) etc. also provide special focus on rainfed areas for improving livelihood security and agricultural productivity. Programme of Integrated Development of 60,000 Pulses Villages in Rainfed Areas was launched in 2010-11 under Rashtriya Krishi Vikas Yojana and is being continued in year 2011-12, to focus on production and productivity enhancement of pulses and oilseeds in rainfed areas. To address key areas, like technology promotion for addressing constraints that are impeding agricultural productivity in states like Assam, Bihar, Jharkhand, Eastern UP, Chhattisgarh, Orissa and West Bengal, Scheme 'Extending Green Revolution to Eastern India', is being implemented since 2011-11 under Rashtriya Krishi Vikas Yojana (RKVY).

Realizing importance of dryland agriculture, Rainfed Area Development Programme (RADP) has been finalized as farmer centric-farming system based programme. Planning Commission has approved implementation of RADP during remaining period of XI Plan though a window of Rashtriya Krishi Vikas Yojana (RKVY). Guidelines for implementation of Rainfed Area Development Programme have been circulated to targeted States.

Concern expressed by the Committee about need to provide post-harvest infrastructure, marketing and pricing in rainfed areas of the country for improvement of agricultural marketing facilities, is being addressed under

Central Sector Schemes (i) Marketing Research and Information network (MRIN), (ii) Development / Strengthening of Agricultural Marketing Infrastructure, Grading and Standardization (AMIGS) and Rural Godown Scheme (RGS).

MRIN Scheme aims at progressively linking important agricultural produce markets spread all over the country for effective exchange of market information. It facilitates farmers in collecting and disseminating information for better price realization. The information collected covers market, price, infrastructure and promotion related issues for efficient marketing. Presently, markets are reporting daily prices and arrivals data using comprehensive national level database at Agmarketnet Portal (http://agmarketnet.nic.in). Wholesale prices and arrivals information in respect of more than 300 commodities and 2000 varieties are being disseminated through the portal on daily basis. Nearly, 3000 markets have been linked to Central Agmarketnet Portal and more than 1900 markets are reported data on daily basis. Weekly prices and arrivals trends are also being disseminated through the portal. Monthly prices and arrivals bulletins are also being generated using national database.

AMIGS scheme provides credit linked investment subsidy on capital cost of general or commodity specific marketing infrastructure, for agricultural commodities and for strengthening and modernization of existing agricultural markets wholesale, rural periodic or in tribal areas. The scheme covers all agricultural and allied sectors including dairy, poultry, fishery, livestock and minor forest produce. The scheme is reform linked and is being implemented in those States / UTs which permit setting up of agricultural markets in private and cooperative sector and allow direct marketing and contract farming. Rate of subsidy is 25% of capital cost of project with limit of Rs. 50 lakhs per project. In case of North Eastern States, Uttarakhand, Himachal Pradesh, Jammu & Kashmir, hilly & tribal areas and to entrepreneurs belonging to Scheduled Caste (SC) / Scheduled Tribe (ST) and their cooperatives, rate of subsidy is 33.33% of capital cost of project, with limit of Rs. 60 lakhs per project. There is no upper ceiling on subsidy for these projects promoted by state agencies.

RGS, 'Grameen Bhandaran Yojana' inter alia includes, creation of scientific storage capacity with allied facilities in rural areas to meet requirements of farmers for storing farm produce, processed farm produce, agricultural inputs, etc., and prevention of distress sale by creating the facility of pledge loan and marketing credit. Under the Scheme, subsidy @ 25% is given to all categories of farmers, agricultural graduates, cooperatives & CWC / SWCs. All other categories of individual companies and corporations are given subsidy @ 15% of the project cost. In case of NE States / hilly areas and SC/ST entrepreneurs and their cooperatives and women farmers, subsidy is 33.33%. The scheme will continue during XI Plan with target of 80 lakh tonne and a budget allocation of Rs. 400 crores. The scheme is demand driven and not location specific. Banks sanction projects depending on viability. The scheme has now been made more farmers' friendly by allowing subsidy for smaller godowns of 50 MT size in general and 25 MT in hilly areas. Five lakh tonnes of storage capacity, to be created will be reserved for small farmers.

(Vide Ministry of Agriculture (Department of Agriculture & Co-operation), Drought Management Division Letter No. 17-1/2009-DMC dated 16 May, 2011).

AGRICULTURAL CREDIT
(Recommendation Para No. 3.61)

The Committee find that the Reserve Bank of India have issued standing guidelines to banks for providing to relief to farmers in areas affected by natural calamities, which particularly aims at providing financial assistance. They also note that States were asked to conduct State Level Banker's Committee (SLBC) meetings in view of the drought to provide relief to farmers as per RBI guidelines. All the States have completed this procedure. Further, the Committee also note that as proposed by the Finance Minister in the General Budget 2010-11 the period of repayment of loan by farmers under "The Debt Waiver and Debt Relief Scheme for Farmers" has been extended by six months from 31 December, 2009 to 30 June, 2010 in view of drought and flood situation during 2009. However, the Committee feel that such one

time measures, which are basically meant to tackle situations resulting from accumulations of years together, are not capable of providing requisite relief to farmers faced with an emergent natural calamity. They, therefore, recommend that there should be a specific Credit Relief Plan, wherein, provisions are made to provide credit relief to farmers, especially small and marginal ones, affected by natural calamities like flood and drought, which should come into operation automatically in such eventualities. The Committee desire they be apprised of the considered views of the Government in this regard more so in the context of the alarming frequency with which the natural calamities are occurring due to climate change, etc.

Reply of the Government

Reserve Bank of India has is operating action plan for providing credit relief to the farmers in event of occurrence of natural calamities, through issue of standing guidelines. Guidelines issued by Reserve Bank of India (RBI) to banks for providing relief, are effective automatically for farmers in areas affected by natural calamities and are issued to enable banks to take uniform and concerted action expeditiously, particularly to provide financial assistance to the farmers. Salient features of the guidelines are as under:

- District Consultative Committees of affected districts are required to meet immediately after occurrence of natural calamities.
- In event of calamity covering a larger part of a State, State Level Bankers' Committee will also convene a meeting.
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- Repayment period of restructured term loan varies depending on severity of calamity and its recurrence, extent of loss of economic assets and distress caused.

- Generally, restructured period of repayment is 3 to 5 years extendable upto 7 years and in extreme cases of hardship upto a maximum period of 10 years.
- In all cases of restructuring, moratorium period of at least one year should be considered.
- Further, banks should not insist for additional collateral security for such restructured loans.

(Vide Ministry of Agriculture (Department of Agriculture & Co-operation), Drought Management Division Letter No. 17-1/2009-DMC dated 16 May, 2011).

Comments of the Committee

For comments of the Committee please refer to Para No. 13 of Chapter I of this Report.

DIESEL AND POWER SUBSIDY
(Recommendation Para Nos. 3.63, 3.64, 3.65, 3.66 & 3.67)

The Committee note that The scheme of "Diesel Subsidy" was introduced during Kharif 2009 for the drought / deficit rainfall affected areas, with a view to give protective irrigation and save the standing crops. The scheme was operational upto 30 September, 2009. Though launched with much fanfare the Scheme was destined to fail due to its poor structuring and the impractical and restrictive conditionality's included in it. The result was that till first week of February, 2010. There were no takers for this Rs. 300.00 crore Scheme, which was applicable upto 30 September, 2009. The Committee are not at all convinced by the explanation of the Government that funds constraint led to inclusion of some of the restrictive clauses. As a more prudent step the Government could have included Diesel Subsidy Scheme as a part of RKVY which is flush with funds and where the States have a lot of flexibility of operations. However, taking cognizance of the fact that this Scheme was implemented for the first time by the Union Government and as per their own admission was a spur of the moment reaction to tackle drought conditions, the Committee desire that the nitty-gritty of the Scheme be worked out, afresh, in

finer details and it may be implemented as a part of RKVY, as and when such exigencies arise.

The Committee also note that the Governments of Bihar and Tamil Nadu have reported about implementation of the Scheme and submitted re-imbursement claims during February and March 2010 for Rs.21.52 crores and Rs.1.43 crores respectively, which are being processed in accordance with the guidelines of the Scheme. The Committee expect these claims to be settled expeditiously.

The Committee further note that the Government provided additional allocation of power to the States with deficit rainfall for agricultural operations during the month of July and August, 2009. The States of Haryana, Punjab, Assam, Uttar Pradesh, Bihar and Andhra Pradesh were provided additional power in this manner.

The Committee understand that both these measures were taken to help farmers draw more groundwater for saving standing Kharif crops. They have been informed that though farmers were encouraged under these Schemes to mine water, a host of measures were also employed to ensure that farmers are made aware of the importance of recharging groundwater. The Committee recommend that recharge of aquifers through artificial means has to be provided further impetus by ensuring that the farmers who give priority to this are rewarded through suitable means.

The Committee also recommend that States like Punjab and Haryana that have submitted proposal for special financial package for saving standing crops in the field may also be given due consideration, as they have, through proactive measures like subsidizing power for agriculture, helped in salvaging the crops production during the drought.

Reply of the Government

As per RKVY Scheme, States are free to take up diesel subsidy scheme for saving distressed and standing crops within their RKVY allocations as they have complete flexibility under RKVY to take up appropriate scheme / interventions for growth / protection of agriculture.

An amount of Rs. 21.52 crore for Bihar and Rs. 1.43 crore for Tamil Nadu towards reimbursement under "Diesel Subsidy Scheme" for Kharif 2009 had been settled (Copies of sanction orders are at **Annexure-II & III).** Government of India has continued Diesel Subsidy Scheme for Kharif 2010. For Kharif 2010, claim was received from Government of Jharkhand and an amount of Rs. 4, 21, 520 was reimbursed to State Government. (A copy of the sanction order is at **Annexure-IV).**

Subject matter of rainwater harvesting and artificial recharge is dealt in the Ministry of Water Resources. Ministry of Water Resources has informed that Ministry and Central Ground Water Board have undertaken following measures to promote rain water harvesting and artificial recharge:

- Ministry of Water Resources has instituted Ground Water Augmentation Awards & National Water Award to encourage Non-Governmental Organizations (NGOs) /Gram Panchayats/ Urban Local Bodies/ Institutions/ Corporate Sector and Individuals for adopting innovative practices of ground water augmentation by rainwater harvesting and artificial recharge, promoting water use efficiency, recycling & re-use of water and creating awareness through people's participation. In total, there are 20 Ground Water Augmentation Awards for six categories consisting of Rs. 1 lakh and plaque with citation and one National Water Award consisting of a cash award of Rs. 10 lakhs and plaque with citation.

- A scheme of dug well recharge is under implementation in Over-exploited, Critical and Semi-Critical assessment units of seven States viz. Andhra Pradesh, Maharashtra, Karnataka, Rajasthan, Tamil Nadu, Gujarat and

Madhya Pradesh, underlain predominantly by hard rock terrain, to provide sustainability to dugwells. Under the scheme 100 % subsidy is provided to small and marginal farmers and 50% to other farmers for construction/ installation of artificial recharge structures in their farms. Expenditure of Rs. 283.457 crore, including Rs. 263.58 crore as subsidy to beneficiaries, Rs. 17 crores to states for IEC/Capacity Building activities and Rs. 0.2417 crore to Ministry for awareness and Rs. 2.6358 crore (1% of net subsidy amount) to NABARD as operating cost, has been incurred under the scheme.

- Mass awareness campaigns on various aspects of ground water management, protection and regulation including rain water harvesting and artificial recharge are organized throughout the country involving Central/State/ NGO's, VO's, welfare organizations, farmers, village panchayats, Water User Associations, educational institutions, industries and individuals.

Proposal for special package from State Governments of Punjab and Haryana for sustaining agricultural production during drought 2009 was considered and Government of India sanctioned Rs. 400 crores to Government of Haryana and Rs. 800 crores to Government of Punjab (A Copy of the sanction orders is at **Annexure-V).**

(Vide Ministry of Agriculture (Department of Agriculture & Co-operation), Drought Management Division Letter No. 17-1/2009-DMC dated 16 May, 2011).

CHAPTER III

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

-NIL-

CHAPTER IV

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

NATIONAL SEED BANK
(Recommendation Para Nos. 3.52, 3.53, 3.54 & 3.55)

In the opinion of the Committee, seed is the most crucial input in agriculture. First and foremost, the future of any crop depends on the quality of the seed. The other inputs like fertilizer, conducive weather conditions, etc. come into play, only subsequently. During a calamity, the quantity and availability of seed assumes immense importance. Just as grain reserves are important for food security, seed reserves are essential for crop security. The Committee note that during Kharif 2009, deficient South West Monsoon necessitated relaxation of seed standards and increased subsidy on seeds. The number of minikits of seeds provided under various Schemes was also enhanced. Besides, Truthfully Labeled seeds were also allowed to meet the additional seed demand. The Committee are unsure about the preparedness of the Government to provide seeds in the eventuality of a drought recurring during Monsoon 2010 as they already had to resort to measures like relaxation of seed standards this year due to non-availability of seeds of prescribed age limit.

A more comprehensive approach would, therefore, be necessary hereafter and the Government needs to be ready for all eventualities, more so with the vagaries of weather becoming increasingly unpredictable due to climate change. In case the first sowing or the initial effort goes waste, it ought not be the question of using the same seed. Calculations ought to be made in the quickest possible time, as to what is the best alternative crop. The same should be procured without any loss of time and made available for sowing. This type of split second response to natural calamities in a vast Country like India is possible only when a detailed mapping of alternate cropping pattern is undertaken. For this purpose, the Government will need to take steps to have

district-wise plans in which even major shifts can be made in crop pattern depending upon the evolving climate situation. The Committee, therefore, desire that such an exercise be carried out by the Government with due diligence and promptitude so that in any such future eventuality, crucial days of sowing are not lost in futile and unrealistic planning.

The Committee have a perception that the Government machinery, as of now is only inadequately prepared to meet the situation, where the climate change can operate like terrorists, whose entry points or modus operandi are difficult to guess. It is very important that not only the crops which could be alternative crops but also the variety suitable for an early sowing, late sowing, mid-sowing be classified and suitable reserves be built up. Taking this into account, the Committee recommend that the Government have to take measures to ensure enough buffer stock of seeds to cater to contingency situations. Preservation of seeds by agencies other than that of the Government, including individual farmers, should also be promoted.

The Committee also strongly feel that establishment of a National Seed Bank shall go a long way in this direction and Government have to consider its establishment on a priority basis. In the same context, the Committee also desire that the Scheme of Seed Villages which is to be implemented in 60000 villages to begin with, should be expanded at the earliest to cover all villages of the Country so that seed availability is decentralized without any further delay.

Reply of the Government

State Governments are primarily responsible for production and distribution of certified/quality seeds to farmers during normal as well as during natural calamities and unforeseen conditions. State Governments make arrangements for production and distribution of seeds to farmers, through State Department of Agriculture, State Seeds Corporation, NSC, SFCI and

private institutions. However, Government of India reviews situation of availability of seeds in advance during each Kharif and Rabi Season and issues necessary guidelines for ensuring adequate stocks and procurement of seeds, by State Government and other agencies.

However, 'Establishment and Maintenance of Seed Bank' component of Central Sector Scheme "Development and Strengthening of Infrastructure facilities for production and distribution of quality seeds" - has been under implementation by this Department since 1999-2000 onwards through National Seeds Corporation (NSC), State Farms Corporation of India (SFCI) and State Seeds Corporation (SSCs). Government of India fixes tentative target which is about 1% requirement of certified / quality seeds for the country, through SSCs functioning in States of Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Jharkhand, Karnataka, Maharashtra, Madhya Pradesh, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttarakhand, Uttar Pradesh and West Bengal. For remaining States this is done by NSC and SFCI. Kerala State Seed Development Authority has also started participating in this programme from year 2011-12 to meet requirements of the State. Seed Stocks reserved under seed bank are utilized to meet exigencies like drought, floods etc. Farmers are not directly maintaining seed banks but are ultimate beneficiaries under Seed Bank Scheme.

All implementing agencies are advised to maintain seeds of only short and medium duration, late sown varieties of different crops having adaptability in respective States. Varieties (under calamities situations) are selected by Seed Corporation for various contingencies from contingency plans, prepared

in consultation with State Department of Agriculture, Indian Council of Agricultural Research (ICAR) or Agriculture Universities.

Under Seed Bank Scheme, grant is provided for maintenance charges of certified and foundation seeds of identified crops, for meeting 50% cost, as revolving funds for procurement of seed. Price differential for leftover seeds and used as non-seed is reimbursed. Financial assistance is also provided for development of necessary infrastructure for construction of seed storage and for setting up of "Data Bank and Information System" for facilitating faster flow of information on availability of seeds.

Physical Target for various seeds to be stored in Seed Bank, during 2011-12, is 2.77 lakh quintals. The physical targets allotted and achievement made during last five years is as under:-

(in lakh quintals)

Year	Target allotted	Achievement
2006-07	**1.67**	**1.37**
2007-08	**1.69**	**1.47**
2008-09	**1.85**	**1.60**
2009-10	**2.02**	**1.66**
2010-11	**2.50**	**2.00 (anticipated)**

Financial assistance released to implementing agencies for Establishment & Maintenance of Seed Bank, during last five years is:-

Year	Rs. in Crores
2006-07	**8.00**
2007-08	**5.63**
2008-09	**4.53**
2009-10	**4.45**
2010-11	**6.73**

(Vide Ministry of Agriculture (Department of Agriculture & Co-operation), Drought Management Division Letter No. 17-1/2009-DMC dated 16 May, 2011).

Comments of the Committee

For comments of the Committee please refer to Para No. 7 of Chapter I of this Report.

FODDER POLICY
(Recommendation Para Nos. 3.56 & 3.57)

The very first indication of the impact of drought is the sale of animals. With their land gone or rendered useless due to drought, people resort to distress sale of animals. Unfortunately, however, enough attention is not given at all to saving the animals and feeding them. Handled more meaningfully, the sustenance of livestock can form an important part of the strategy to tackle the effects of natural calamities like drought, as crop-livestock integrated farming can provide avenues of alternate income in case of crop failure. Such income provided by well fed/maintained cattle/milch animals provides the much needed succour to the farmers to tide over the hard times and avoids their falling into debt trap. The Committee note that during the drought situation of Kharif 2009, the Government provided fodder minikits to avoid any shortage and allowed RKVY funds to be used for purchase of fodder seeds. States with inadequate fodder availability were asked to tie up with those with surplus. The Committee were also informed that the Government have not received any reports of shortage of green fodder from affected States.

However, the Committee know that at the ground level, there is still a lot of avoidable loss of fodder due to reasons like the use of bulk harvesting machines. The alarming shrinking of land area, hitherto, used for growing of fodder and grazing of cattle is also a perturbing factor. The imbalance in fodder availability among States is also to be addressed. The Committee are of the

opinion that it is high time a National Fodder Policy is formulated and recommend that this may be undertaken without any further delay.

Reply of the Government

National Policy for Farmers (NPF), 2007 inter alia, provides for attention to animal feed including fodder. In pursuance to NPF, 2007, Government of India announced "Accelerated Fodder Development Programme (AFDP)" in GOI's Budget 2011-12 for increasing income of farmers, dependent on livestock. The programme envisages accelerating production of fodder through promotion of integrated technologies and processes for enhancing availability of fodder throughout the year. The strategies include production of quality seeds, production of fodder and adoption of appropriate technologies for Post-Harvest Management. The programme will be implemented on location specific approach in twelve States, viz., Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Tamil Nadu and Uttar Pradesh, as a sub-scheme of Rashtriya Krishi Vikas Yojana (RKVY) during 2011-12 with allocation of Rs. 300 crores.

(Vide Ministry of Agriculture (Department of Agriculture & Co-operation), Drought Management Division Letter No. 17-1/2009-DMC dated 16 May, 2011).

Comments of the Committee

For comments of the Committee please refer to Para No. 10 of Chapter I of this Report.

CHAPTER V

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

SOIL HEALTH
(Recommendation Para No. 3.62)

The Committee have been time and again emphasizing upon the Government, the pressing need for focusing on the Soil Health of the agriculture land in the Country. The unscientific agricultural practices, depleting water resources, excessive/indiscriminate use of fertilizers and pesticides, deforestation, etc. have all led to serious deterioration in soil health of almost the entire cultivable area in the Country. The Government, unfortunately, however, have not responded to this serious problem with the alacrity it deserves. The Soil Health Cards for farmers are still a distant dream, though the Nutrient based Fertilizers Scheme has already been launched from 1 April, 2010. The Committee wonder as to what purpose this new Scheme will serve in the absence of authentic field data on soil fertility. They, therefore, recommend Government should get down to the task of completing the Soil Health Cards Scheme in coordination with the State Governments and their own field institutions with utmost urgency. The submission of the Secretary, Department of Agriculture & Cooperation before the Committee on 7 May, 2010 that they were getting a very enthusiastic response in the matter at the highest levels from the State Governments, is a pointer to the fact that the States also realize the immense importance of restoring soil health. Once this is done, the Committee are hopeful that the NBS will also be implemented in a more professional and purposeful manner.

Reply of the Government

Government of India is promoting concept of balanced use of fertilizers and also advocating concept of soil test based fertilizer use to maintain soil health for increased productivity. National Project on Management of Soil Health and Fertility (NPMSH&F) was launched during 2008-09 with objective of setting up and strengthening Soil Testing Laboratories (STLs), promoting Integrated Nutrient Management (Organic manure, soil amendment and micronutrients) and strengthening of Fertilizer Quality Control Laboratories with envisaged outlay of Rs. 429.85 crores during 11th Five Year Plan. During first three years of implementation, 124 new static Soil Testing Laboratories (STLs), 116 new Mobile STLs and strengthening of 155 existing STLs has been sanctioned under the scheme. Setting up/strengthening of STLs is the first step to issue soil health cards to the farmers.

In order to promote application of balanced used of fertilizers, Indian Institute of Soil Science (IISS), Bhopal under Indian Council of Agricultural Research (ICAR) was sanctioned Rs. 10.32 crores under scheme "National Project on Management of Soil Health & Fertility" for preparation of "Geo-Referenced Soil Fertility Maps" including interlinking of soil fertility status with Soil Test Crop Response data to generate site specific recommendations in 19 major States (171 Districts). ICAR has already collected GPS based soil samples in 18 States and analysis of samples is in progress. IISS, Bhopal with help of soil test data of State Department of Agriculture, GIS based soil fertility maps of NPK for 21 States at district level and 12 States at tehsil level

have been prepared for NPK. The maps are available for public domain at website www.iisss.nic.in.

(Vide Ministry of Agriculture (Department of Agriculture & Co-operation), Drought Management Division Letter No. 17-1/2009-DMC dated 16 May, 2011).

Comments of the Committee

For comments of the Committee please refer to Para No. 16 of Chapter I of this Report.

NEW DELHI;
14 December, 2011
23 Agrahayana,1933 (Saka)

BASUDEB ACHARIA
Chairman
Committee on Agriculture

ANNEXURE-I

CONTINGENCY AGRICULTURE PLAN FOR KHARIF 2010

Department of Agriculture & Cooperation
Ministry of Agriculture
Government of India
Krishi Bhawan, New Delhi - 110001

CONTINGENCY AGRICULTURE PLAN FOR KHARIF 2010

CONTENTS

CONTINGENCY AGRICULTURE PLAN FOR KHARIF 2010

Introduction :

The India Meteorological Department (IMD) has issued the second stage long range forecast for the South West monsoon season rainfall (June – September) over the country as a whole on 25th June, 2010. The IMD has predicted that rainfall for the 2010 South West monsoon is likely to be 102% of Long Period Average (LPA) over North West India, 103% of LPA over North East India, 99% of LPA over Central India and 102% of LPA over South Peninsula; all with a model error of ±8%. On an average the country is likely to receive 102% of LPA monsoon season rainfall with a model error of ±4%. Rainfall over the country as a whole for the months of July and August is likely to be 98% and 101% of LPA, respectively with a model error of ±9%.

Occurrence of normal rain during South West Monsoon season (June – September) is very crucial for agricultural production as nearly 65% of Indian agriculture is rainfed/ rain dependent. The normal prediction of south west monsoon season rainfall by IMD during 2010 is a welcome sign. However, from agricultural production and productivity view point, uniform spatial and temporal distribution of rainfall in all regions of the Country is very crucial and more relevant than average rainfall for the whole country. Even during a normal rainfall year some regions/ districts within the states may get less or scanty rainfall. Timely formulation and implementation of contingent agriculture plan helps to negate/ moderate the ill effects of low/scanty rainfall on production and productivity of crops in such regions/ areas.

The Department of Agriculture & Cooperation (DAC) has prepared a contingent crop plan to suit to different southwest monsoon scenarios in different agro-climatic regions of the country. A copy of this contingent crop plan is being circulated to all the States for initiating timely interventions to deal with sub-dued/ scanty monsoon, in case such situation arises, during Kharif, 2010. The states will use this contingent plan as a broad guideline and will implement strategies after incorporating location specific modifications/ adjustments.

The Central Research Institute for Dryland Agriculture (CRIDA/ ICAR), Hyderabad is preparing district wise contingency plans. They will complete the job for about 200 districts by September – October, 2010. The Agriculture Commissioner, DAC is visiting States to review the preparedness of different states for Kharif, 2010 in terms of input availability and crop contingent plans. The exercise has been completed for the states of West Bengal, Bihar, Orissa, Chhatishgarh, Jharkhand, Andhra Pradesh, Karnataka, Tamil Nadu, Kerala, Madhya Pradesh and Maharashtra by July 13, 2010. All these States

have been advised to prepare district-wise contingent plans in collaboration with SAU's/ ICAR Institutes/ KVK's.

Date Bound Crop Contingency Plan for Rainfed Regions

Till 14th July,2010 the monsoon have covered almost the entire country. The spread of monsoon in time and space seems to be quite satisfactory except some regions/ districts in UP, Bihar, Jharkhand, MP and Rajasthan. A crop contingent plan according to probable date of occurrence of monsoon in different agro-eco regions for rainfed areas is presented below. The states may implement this crop contingent plan to coup-up with less/scanty rainfall, in case such situation arises during Kharif season.

Sl. No.	IMD/Agro-eco region	Probable date of occurrence of railfall		
		15-31 July	Crop Plan 1-15 August	16-31 August
1	2	3	4	5
1.	IMSD sub division (IMSD) : Punjab Agro ecoregion (AER): 9.1 Major production systems (MPS) : Maize/ Rice-Wheat Area domain (AD): Submontaneous districts of Punjab, J&K, HP and Western UP	Short duration maize, moong, mash as grain crops. Bajra, guar, sorghum and maize as fodder crops. Vegetable cowpea and clusterbean.	Moong and mash as grain crop. Bajra, guar and maize as fodders. Sunhemp or Sesbania as green Manure, Vegetable type clusterbean and cowpea.	Bajra as fodder crop
2.	IMSD : Plains of western UP; AER :4.1 MPS : Pearlmillet/ Rapeseed and Mustard AD : Agra, Mathura, Aligarh, Bulandshahar, Meerut, Etah, Mainpuri and Western part of Muzaffarnagar	Pearlmillet, clusterbean, green gram, short duration pigeonpea, vegetable type cowpea and clusterbean	Transplanted pearmillet, clusterbean, green gram and cowpea. Cowpea and clusterbean (vegetable type)	Clusterbean, cowpea
3.	IMSD : Plains of Western U.P. AER : 4.4 MPS : Fodder sorghum/ pulses AD : Jhansi, Banda, Hamirpur, Lalitpur, Morena, Gwalior	Bajra, guar, cowpea, lablab bean, pigeonpea and black gram as grain crops	Bajra, guar and cowpea as grain and fodder. Pigeonpea and black gram as grain crops	Bajra, guar and cowpea as grain and fodder
4.	IMSD : Haryana, Chandigarh & Delhi AER : 2.3 MPS : Pearlmillet – Rapeseed/ Mastard AD : Hissar, Bhiwani, Sirsa, Mahendergarh, Gurgaon & part of Rohtak district	Short duration bajra (HHB- 67), moong, urdbean (T-9), Cowpea (Charodi), guar (HG 365) and also vegetable type clusterbean and guar	Transplanting of HHB-67 variety of bajra as grain crop or direct sowing as fodder crop	Moisture may be conserved for toria sowing during Rabi

Sl. No.	IMD/Agro-eco region	Probable date of occurrence of railfall		
		15-31 July	Crop Plan 1-15 August	16-31 August
1	2	3	4	5
5.	IMSD : Eastern Rajasthan AER : 4.2/2.1 MPS : Maize / Pearlmillet AD : Bhilwara, Tonk, Dungarpur, Ajmer, Chittaurgah, Rajasamand, Jajore, Sikar, Jodhpur, Churu	Sesame (RT-46), green gram (K 851, RM G 62), Sorghum and cowpea as fodder, Snapmelon and mateera as vegetable crops	Sesame (RT-125), green gram (RMG 62), sorghum as fodder crop	Sorghum as fodder, toria (TL 15), taramira (T 27)
6.	IMSD : Jammu and Kashmir AER : 14.2/ 14.3 MPS : Maize AD : Jammu, Punch, Riasi, Muzzafarbad, Udhampur, Kathua	Bajra, cowpea, moong (direct sown), bajra (transplanting)	Bajra + cowpea/ guar (fodder), Jowar + cowpea/ guar (fodder), maize + cowpea/ guar (fodder)	Fodder as shown in 1-15 August and /or field reparation for September sowing of toria, gobhi sarson.
7.	IMSD : Eastern U.P. AER : 9.2 MPS : Rice/ Pearlmillet AD : Varanasi, Mirzapur, Jaunpur, Ghazipur, Sitapur, parts of Shahjahanpur, Lucknow, Barabanki, Rai Beraeli, Sultanpur	Short duration upland rice varieties (NDR-97, NDR 118, Barani deep, Cauvery, Akashi, Mutmuri). In light texture soils green gram (T 44, Pant moong 1), black gram (T9, Pant Urd 19, 35, Narendra Urd 1), Pigeonpea (Bahar and Narendra Arhar 1), sesame (T-4, T-12, T-13). Vegetable type cowpea, lablab bean and guar	Hybrid bajra (NHB-3, NHB-4, BJ-104, green gram, black gram, pigeonpea, sesame, niger (GA 10, Ootacamund), short duration upland rice varieties, vegetable type cowpea, guar and lablab bean.	Green gram, bahar variety of pigeonpea. Niger varieties GA 10 and Ootacamund
8.	IMSD : Madhya Maharashtra AER : 6.1 MPS : Rabi sorghum AD : Solapur, Bidar Osmanabad, Ahmednagar, parts of Satara, Latur and Sangli	Sunflower, pigeonpea, horsegram, setaria, castor, pearlmillet Sunflower + Pigeonpea (2:1); Pearlmillet + horsegram (2:1); Pigeonpea + Clusterbean (1:2); Castor + Clusterbean (1:2)	Sunflower, Pigeonpea, castor. Sunflower + pigeonpea (2:1)	Sunflower, Pigeonpea, castor. Sunflower + pigeonpea (2:1) Sorghum for fodder
9.	IMSD : Vidarbha AER : 6.3 MPS : Cotton/ sorghum AD : Akola, Warda, parts of Amravati, Yeotmal, Parbhani, Buldana and Khandesh and part of Adilabad of A.P	Pigeonpea, Pearlmillet, maize, Sunflower	Pigeonpea, Pearlmillet, maize, sunflower, castor	Pigeonpea, castor or reserve the land for rabi safflower

Sl. No.	IMD/Agro-eco region	Probable date of occurrence of railfall		
		15-31 July	Crop Plan 1-15 August	16-31 August
1	2	3	4	5
10.	IMSD : South Interior Karnataka AER : 8.2 MPS : Fingermiller AD : Bangalore, Kolar and Tumkur	Sowing of long duration varieties (Indaf 8, L-5, MR1) or Transplanting of nursery of above varieties Fingemillet + red Gram (8:1) and Fingermillet + field bean, Littlemillet and foxtail, Groundnut, Sunflower hybrids, castor, soybean, chilies	Sowing of medium duration varieties (GPU 28, HR 911, PR 202)or transplanting. Sowing of short duration varieties (GPU 26) as nursery. Sun-flower hybrids (KBC 2) and soyabean (KBSH 2). Transplanting of chilies. Maize, sorghum, bajra as fodder crop	Transplanting of short duration varieties (GPU 28, HR 911 and PR 202). Cowpea (KBC1, KBC2, Lolita), Horsegram (KBH1/ PGG9). Transplanting of Chilies if protective irrigation available. Maize, sorghum, bajra as fodder Crops.
11.	IMSD : Western MP AER : 5.2 MPS : Soybean, Sorghum AD : Indore, Ratlam, Ujjain, Dewas, Dhar, Khandwa, parts of sehore	Short duration Maize, (Navjot, Sathi etc.), Pigeonpea (OCPKL 151, T21, Kh2, ICPL 87, ICPL 88039) in deep soils, Sunflower (Modern, Surya, Manjira and other Hybrids). Sesame (Bhadeli, TGK 22, TKG 37), Cowpea (Pusa Komal, Pusa Baisakhi, Castor (Ganesh and Varuna). Sorghum, sudangrass, maize (African tall) Dinanath grass and bajra as fodder crops.	Sunflower, sesame, cowpea, castor (Varities same as for 15 to 31 July season) Sorghum, Sudangrass, maize (African tall), Dinanath grass and Bajra as fodder.	Safflower (JSF 1, JSF7, JSF 73, Sharda); sunflower (Modern, Surya and Manjira); Sesame (RT 46); Rajgira (CO1, CO2; caster. Maize (African tall) as fodder crop)
12.	IMD : Rayalaseema AER : 3.0 MPS : Groundnut AD : Anantapur, Kurnool, Chittoor districts of A.P.	Groundnut (vemana, TMV 2) + redgram (Palandu)	Groundnut (TMV2, ICGV 91114)	Pearlmillet (ICTP 8203, ICMV 221); Green gram (MGG 295, MGG40, PDM 54); dual purpose sorghum (M 35-1-1, NTJ 1,2,3,4); Horsegram (AK21) Manukulthi and Local)

Sl. No.	IMD/Agro-eco region	Probable date of occurrence of railfall		
		15-31 July	Crop Plan 1-15 August	16-31 August
1	2	3	4	5
13.	IMSD : Gujarat, Daman, Dadra and Nagar AER : 4.2 MPS : Pearlmillet AD : Khera, Gandhinagar, Mehsana, Sabarkanta, parts of Ahmedabad, Panchmahal, Banaskantha and Vadodara Districts.	Clusterbean, castor, fodder sorghum	Thinning of already planted crops. Castor and fodder sorghum	Castor, fodder sorghum, fodder sorghum + cowpeas
14.	IMSD : Saurashtra, Kutch and Diu AER : 2.4 MPS : Pearlmillet/ Groundnut AD : Rajkot, Sundergarh, Jamnagar, parts of Junagarh, Bhavnagar and Amreli	Errect groundnut (GG 2,.5,7); Sesame (G1, G2); Hybrid bajra (GHB 235, 316, 558); Green gram (KB51, GM4); blackgram (T9); pigeonpea (ICPL 87, GT 101	Blackgram (T9); Forage maize/ sorghum (GFS 5), castor (Gauch 1); sesame (Purua 1)	Forage maize/ sorghum (Gundri GFS 5), sesame (Purua1)
15.	IMSD : Orissa AER : 18.4 AD : Uplands and medium lands of Balasore, Cuttack, Puri and Ganjam	**A. Upland (Rainfed)** Blackgram (Setaria/ Pant 30); Greengram (PDM 54/K851); sesame (Uma or local), Early pigeonpea (UPAS 120/ ICPL 87); short duration raddish, okra, cowpea (SEB 1,2) and clusterbean as vegetables	**A. Upland (Rainfed)** Niger, blackgram, raddish, beans and cowpea as vegetables, early Pigeonpea (ICPL 87/ UPAS 120)	**A. Upland (Rainfed)** Horsegram, sesame, Niger, Cowpea
		B. Medium land (rainfed shallow submerged low land) Direct line sowing of short duration (about 100 days) rice varieties such as Khandagir, Pathra, Lalitgiri or Udaygiri	**B. Medium land (rainfed shallow submerged low land)** Direct line sowing of extra early rice varieties such as Heera, Vandana, Kalinga 111, ZHU 11-26, Rudra, Sankar and Jaldi 5	**B. Medium land** Land preparation For sowing of pre- rabi crops like mustard/ greengram/ early pigeonpea.

3. *Crop-Group and Crop-wise Contingency Plan for Kharif Season*

A. *Rice*

a. *Rainfed*

- *In traditionally* rice growing rainfed areas where rains are likely to cease late and where a normal transplanted rice crop is ruled out, short duration upland rice varieties or those rice varieties that are suitable for direct seeding either in dry or wet condition and subsequent flooding are recommended by direct seeding. In certain areas, delayed transplanting can be done with older nurseries if these varieties are suitable. Suitable rice varieties for different situations are listed in section 8.

b. Irrigated

- Irrigation at 1 to 4 days after disappearance of ponded water in case of rice produces almost similar yields as are obtained with continuous submergence. This practice economizes more than 30% of irrigation water without lowering the rice yields. Farmers may be advised to strictly follow this irrigation schedule for already transplanted rice crop.
- Last irrigation to paddy can be terminated 14-17 days before harvest. This saves about 16 cm of irrigation water without any yield reduction. The farmers need to be apprized about this practice well in advance as the short duration early maturing paddy varieties are likely to mature by mid September. The irrigation to such varieties may be withheld beyond August 31 and the same water can be effectively used for main season planted varieties.
- In case rains are delayed beyond July 31, 2010, maize, green gram and black gram crops should be preferred.
- Certain varieties of maize and pulses can be grown upto August 15, 2010.
- Under delayed monsoon arrival situation rice nurseries are over matured. While transplanting such nurseries 1/3rd upper portion can be cut/ removed before planting.

B. Pulses

- In the event of late monsoon arrival the pulse crops which can be planted preferably up to 15th August or till 1st week of September are: Blackgram, Greengram, Pigeonpea and Mothbean
- In case of greengram and blackgram all varieties recommended for *kharif* season may be grown up to first week of September. Sowing after first week of September may be done only for the purpose of fodder.
- Only specific varieties of pigeonpea may be grown up to first week of September which are recommended for pre-*rabi* planting. These varieties are Bahar, Pusa 9 and *rabi* Arhar 20(5) for the States of Bihar, W. Bengal, Orissa, Andhra Pradesh, Maharashtra and Gujarat.
- Summer moong (SML-668) in Punjab and Haryana may be ready for harvest by end June. The crop if matured should be harvested/ thrashed on priority.

- Crops like mothbean can be grown for grain as well as fodder till the second week of August in the states of Rajasthan and Gujarat.
- Most of the pulses crops are sensitive to water logging. In case, heavy rains occur over a short period, excess water should be drained immediately.
- As far as possible Kharif pulses should be cultivated following Ridge-Trench system.

C. Oilseeds

- In case of oilseed crops, sesame can be planted up to third week of August whereas niger can be sown upto September. Since the per hectare requirement of seed in case of sesame is very low, all out efforts must be made to cover more area under sesame to utilize the land in the event of failure of other *kharif* crops like maize, pearlmillet and other minor millets.
- Similarly, castor can be grown successfully up to first week of September in areas which are suitable for castor cultivation.
- The other two important oilseed crops like soybean and groundnut are likely to suffer heavily in case rains are delayed beyond end July. However, groundnut can be planted up to September in a few southern states. Therefore, efforts should be made to cover more area under groundnut in the States of Andhra Pradesh, Tamil Nadu and Karnataka.
- Since the monsoon rains during 2010 are likely to be continued till September, there seems good possibility of coverage for toria/ mustard in the States of Rajasthan, Punjab, Haryana, Madhya Pradesh, Uttar Pradesh, Bihar and W. Bengal. Therefore greater emphasis is to be given to cover more area under Toria/ mustard crop in case of extended rainfall scenario. Seed of all recommended varieties of toria needs to be assured to take full advantage of extended monsoon phase.

D. Sugarcane

The following contingency plan for the benefit of the cane growers to protect the crop from complete failure in case of scanty rains/ drought is suggested.

a. Soil Moisture Conservation

- In case drought like situation arises the dried lower leaves of the standing cane crop may be stripped and used as mulch in the inter-row spaces of the crop. This will conserve available soil moisture by controlling weeds and cutting down surface evaporation.
- The intercultural operations may be undertaken to create dust mulch to break soil capillaries for checking surface moisture loss.

b. Efficient Irrigation Management

- Extensive (light life saving) irrigation over larger cane area rather than intensive (heavy) irrigation in limited area may be practiced.
- To adopt to alternate furrow irrigation to effect water economy.

- Under limited water availability conditions, irrigations should be scheduled to cover the drought susceptible varieties and ratoon stands in the first instance. The irrigation may be phytophased to avoid soil moisture stress at consecutive critical stages of crop growth.

Sprinkler irrigation system may be operated during period of low evaporative
nand to maintain optimum soil moisture regime.

ent of shortfall in the availability of canal water, it is suggested that the may adopt alternate furrow irrigation which will economize water ent by nearly 50%.

nicro-irrigation system such as drip and sprinkler may be advocated feasible and in the event of limited water availability.

:one is mainly rainfed. In this zone, cotton is grown mainly as rainfed l is subjected to the vagaries of monsoon. The following moisture ıtion measures are suggested for effective utilization of the available the soil as well as the likely precipitation in the remaining part of the

nent of ridge and furrow across the slope for effective conservation of ıture as well as rainwater.

rganic mulches such as subabul lopping, straw etc to conserve the soil

d interculture operation to keep the field weedfree.

ər water resources are available such as lakes, ponds, wells etc. e irrigations can be provided to the crop.

igation system as suggested above may also be adopted wherever for improving the water use efficiency and to cover more area.

input management through foliar applications is suggested.

areas of central zone where sowing has not been undertaken so far, ıration varieties recommended for respective states by State Variety Committee/Central Variety Release Committee may be planted latest 31, 2010. Beyond end July, alternative crops such as castor and ea may be cultivated looking to the local conditions.

ıtingency measures suggested for central zone are also applicable rainfed areas of south zone especially Andhra Pradesh and ıka

ntral zone, varieties of *arboretum* which have higher degree of tolerance ght conditions such as Maljari (for Madhya Pradesh), AKH 4, AKA 8401, Sweta, AKA 5, Turab, Y1 (for Maharashtra) and varieties of *herbaceum* arat) may be cultivated.

aturing varieties of *G. hirsutum* such as PKV 081, Rajat, Anjali, LRA 5, may also be planted where sowing has been delayed because of late f monsoon.

F. Pearlmillet

- Planting of pearl millet hybrids is not advisable. Even early maturing hybrids like HHB 67 should not be planted beyond end July.
- Wherever crop has been planted and suffering for moisture stress, the plant population may be reduced and shallow interculture (dust mulching) may be practiced.
- The pearl millet may be grown mixed with pulses up to 1st week of August as fodder crop, which may give at least fodder to some extent.

G. Sorghum

In case there is delay in monsoon by 2-3 weeks, short duration cultivars such as CSH 6 and CSH 14 can be preferred. In case of staggered planting where some farmers have already sown and others did not, increase seed rate to an extent of 1.5 times of the recommended rate and application of 20 kg of carbofuran or phorate (3g) granules in the seed rows before sowing are recommended to safeguard against the anticipated shoot-fly attack. Other shoot-fly control measures (spraying of endosulphan 2 ml/litre of water after sowing) can also be followed if soil application is not adopted.

H. Small Millets

a) Rayal Seema region of Andhra Pradesh, parts of Karnataka and Maharashtra

Foxtail millet (knagni) is one of the choice crops of these regions in view of its drought tolerance, freedom from major pests and diseases, photo insensitivity and assured modest yield. For fox-tail millet in Andhra Pradesh, Karnataka and Maharashtra, application of 40:30:0 kg NPK/ha as basal dose for achieving quick growth and withstanding drought is recommended.

b) Western Rajasthan

Foxtail millet (knagni) a well known drought hardy crop can give reasonable harvest in areas where annual rainfall is less than 400 mm. Varieties of fox-tail millets, viz. SR 11 (Gauri) and SR 16 (Meera) are suitable for delayed planting and mature in 80 days. SR 16 has stay green character and gives higher fodder yield also. Application of 10-20 kg N/ha as basal dose is beneficial in withstanding drought and giving higher yield.

c) Gujarat

Small millets are not important in the state except in the region of Dangs and adjoining areas. In years of extreme drought and erratic monsoon small millets like kodo, proso and little millet could be ideal crops for contingency planning for producing quickly fodder and grain.

d) Madhya Pradesh and Chattishgarh

Little millet (kutki) is one of the important crops of tribal areas of M.P. and well known for early maturity and resilience. Kodo millet is another crop grown extensively in these states and popular in tribal areas. Kodo millet varieties viz. JK-76 matures in 80-85 days and RBK 155 matures in 90-95 days. Application of 10-20 kg N/ha as basal is beneficial.

I. **Vegetables**

- Mulching soil surface with organic material (leaf mould, FYM) and clean cultivation.
- Growing vegetables such as cluster bean, cowpea, lablab bean which can sustain with less amount of water.
- Enhancing cucurbitaceous vegetables by raising nursery in polythene bags followed by transplanting in order to save 2-3 irrigations.
- Sowing/planting cucurbitaceous vegetables adopting hill and channel system to economise water.

Crop and Nutrient Management

In case sugarcane crop experiences drought like situation in particular area it would be advisable to adopt the following management practices to save the crop and revive its further growth.

- Weed control through herbicides may be taken-up particularly in late planted cane. Where herbicide application is not feasible, the weeds may be cut and used as surface mulch to conserve soil moisture.
- Earthing-up operation could also be taken in autumn and timely planted crops which have attained reasonable height. The furrows created in this way may be utilized for light irrigations covering more cane area.
- If drought persists, the sugarcane crop with poor growth failing to form millable canes may be harvested in October to raise ratoon stand from such crop. The harvested material may be used as seed cane for autumn planting and/or feeding to the cattle.
- The last dose of nitrogen meant for elongation phase, if already not applied, may be top dressed only with light irrigation or after rains.
- Spray of 2.5% urea with 2.5% KCl or MOP may be useful in areas where some soil moisture is available. This will impart drought tolerance to plants.

Plan for autumn planting of sugarcane crop (2010-2011)

- The area meant for autumn sugarcane planting should be kept free of weeds and conserve soil moisture to start early planting.
- Autumn sugarcane may be intercropped with short duration high value mid season income generating crops like *toria*, mustard, peas, spices etc. This will also encourage farmers to go for planting more acreage under autumn sugarcane giving higher cane yield and sugar recovery.
- Winter initiated ratoon of early sugarcane varieties may be intercropped with high density early bulking forage crops like *senji* to protect the stubble sprouts from cold injury, enhance soil fertility and provide forage to animals.

4. Contingency Plan Relevant to All Crops and Cropping Systems

A. Special package of practices

(i) Making fields free of weeds for full utilization of water and nutrients by the crops

(ii) Reduction of plant density: In case of mid season drought the crops should be suitably thinned out. In case drought occurs at very early stage, it is always better to resow with subsequent rain rather than allowing sub-optional poor plant stand to persist.

(iii) For drought conditions anticipating prolonged dry spell breaks the practices of inter-row cropping helps in risk distribution. This can be achieved by including a companion crop like green gram, black gram, cowpea than the main crops like sorghum, pearlmillet, maize.

(iv) The recommended dose of nitrogen application should be reduced by 40% under unirrigated conditions and should always be applied at sowing/planting. On the arrival of rains N fertilizer can be top dressed.

(v) Full recommended dose of P and K should be placed as basal dose. These nutrients help increasing tolerance to moisture stress.

(vi) Resorting to maximum possible use of organic bulky manures. These organic materials help conserving moisture in the soil.

(vii) Recommended plant protection measures to be adopted for all the *kharif* crops as per package of practices of respective states.

(viii) Seed of sorghum, pigeonpea, mung bean, urd bean, cow pea, groundnut, sunflower and castor must be treated with Thiram or Captan @ 2-2.5 g/kg seed before sowing.

B. Soil and water management practices

(i) Seed beds to be kept ready so as to facilitate sowing immediately with the onset of rains. Fields should be properly leveled for uniform water distribution within the sub-plot.

(ii) Broad bed and furrow, ridge and furrow, compartmental bunding and contour trench land configuration may be adopted in shallow alfisols as moisture conservation practices.

(iii) Furrow sowing of *kharif* crops at closure plant to plant distance with wider inter row spacing.

(iv) Wherever economically viable, mulching should be practiced in between crop rows using locally available mulching material.

(v) Wherever possible run-off may be harvested to make provision for protective irrigation at later stage/crop ripening.

(vi) Major emphasis on in-situ rain water conservation, harvesting excess run-off for re-use and groundwater recharge.

C. Some other useful irrigation water saving practices

- Reduction of conveyance losses while irrigating the light textured soils. A simple and cheap technique is to spread a polythene sheet in the field channel before irrigating the field and then roll it back for irrigating the other field.
- Wherever possible the crops should be sown on ridged plots and irrigating every alternate furrow on rotation. This helps in saving of irrigation water and better growth and productivity of crops when planted on ridges/beds.

- Ensuring best use of rainwater. In case a rainfall of about 3-5 cm occurs near to irrigation date, the irrigation may be avoided.
- Lighter irrigation may be applied during initial growth stages when root growth is limited.
- Poor rainfall means lesser recharge to the groundwater. Since groundwater is the most dependable source of irrigation, its indiscriminate exploitation must be avoided. In hard rock areas, for improving well yields, long and continuous pumping should be substituted by intermitant pumpage.

5. Judicious use of Surface and Ground Water During Scanty Rainfall/ Drought

Rainwater is the main source of surface and groundwater recharge. In case of deficient and scanty monsoon rainfall recharging of groundwater may not take place. Water management issues related to deficient rainfall and need attention include (a) less exploitation of groundwater for irrigation, (b) increased concentration of salts in the soil profile and groundwater, (c) increased concentration of specific ions like fluorides and nitrates in water and (d) non-availability/ less availability of drinking water for animals in natural storage structures such as ponds, lakes etc. Immediate steps needed to make efficient use of available surface and groundwater in such areas are :

a) Resorting to drip and sprinkler irrigation practices wherever possible particularly for commercial crops including fruit orchards and widely spaced vegetables. For row crops alternate rows may be irrigated. Raised bed planters save 35 to 50% irrigation water and enable raised bed farming which particularly suits to vegetable cultivation besides cereals, pulses and oilseeds.

b) Studies on groundwater resources indicate that 25 to 84% of the poor quality water are also being used for cropping in several states of the country such as AP, Gujarat, Haryana, Karnataka, MP, Rajasthan and UP. Based upon climate, soil, water and crop factors, the Central Soil Salinity Research Institute, Karnal has standardized water quality guidelines which must be kept in mind while irrigating the crops using poor quality groundwater in drought prone areas. In a normal rainfall year salinity developed in soil due to poor quality irrigation water gets leached or washed. However, this does not happen in a below normal rainfall year and one has to deal with relatively higher salinity levels. Some specific strategies for efficient use of poor quality water during deficient rain year are :

   i) Mixed and/ or alternate use of limited good quality and underground poor quality waters for irrigation.

   ii) Cultivation of salt tolerant varieties like CSR-10, CSR-13, CSR-27, CSR-30 and CSR-36 of rice; KRL 1-4, KRL-19 of wheat; CS-52, CS-54 and CS-56 of mustard; CSG-8962 of gram.

   iii) Farmers having residual sodium carbonate (RSC) water for irrigation should be encouraged to use this water judiciously by applying gypsum as soil amendment. In order to facilitate quick utilization, it is recommended that gypsum should be kept in baskets (made from bamboo/mulberry sticks) and covered with jute sack and placed under the source of irrigation so that neutralized water is used for irrigation.

iv) The states of Haryana, Punjab, Rajasthan, Madhya Pradesh, Uttar Pradesh and Andhra Pradesh should therefore, need to take special extension programmes and provide gypsum freely/ and or soft loan term basis to promote use of alkali waters.

v) In the saline areas, if there is less rainfall and farmers are unable to take Kharif crop, it is proposed that they be advised to give pre-sowing irrigation with saline waters and go in for *toria* cultivation in September.

vi) The farmers having saline waters may go for *Isabgol* cultivation as this crop can withstand the saline water irrigation upto EC 8dS/m during the *rabi* season and give profitable yield. *Matricaria* is another medicinal crop which can be cultivated even upto soil pH9.5.

c) In a sizeable area of Rajasthan, groundwater is also loaded with fluorides and nitrates. Hand pumps have been designed by state agencies for safe use of these waters for drinking. Each pump costs about Rs. 5000-6000. Immediate efforts are required to install these attachments in all drought prone areas having fluoride and nitrate problem in groundwater.

6. Specific Contingent Crop Plan for Rainfed Regions of Rajasthan and Haryana

S.No.	Crops	Varieties	Probable date of occurrence of rainfall			Duration of crop, seed rate etc.
			15-31 July	1-10 August	10-20 August	
1.	Pearl millet + Cowpea (for Fodder) Or Pearl millet + Moth (for Fodder)	Raj. 171, MH 169 + C 152, Charodi-1, B 16, RS 19 Raj. 171, MH 169 + RMO 40, RMO 257 (for fodder)	Yes Yes Yes	Yes Yes Yes	Yes Yes No	85-90 days 65-95 days 10% higher Seed rate 85-90 days 60-75 days, 10% higher seed rate
2.	Moth bean	RMO 40, RMO 257 (for fodder)	Yes	Yes	Moth Bean RMO 40	60-75 days, 10% higher seed rate
3.	Cluster bean	RGC 936, RGC 1002	Yes	Yes	For fodder (RGC 936)	85-90 days, 10% higher seed rate
4.	Cluster bean (Vegetable Type)	Pusa Nav Bahar Pusa Sada Bahar	Yes	Yes	Yes	65-70 days, 10% higher seed rate
5.	Cowpea (Vegetable Type)	Pusa Komal Pusa *Do Fasli*	Yes	Yes	Yes	65-70 days, 10% higher seed rate

7. Contingent Plan Specific to Irrigated Areas of Punjab, Haryana and Western Uttar Pradesh

Sl. No.	Situation	Option		Rainfall Status			Remarks
		Crop	Variety	Before August 1	August 2-10	August 11-20	
1.	Rice area which could not be trans-planted till July 31, 2010	Short duration early maturing rice, Maize	Govinda All Hybrids	Yes Yes	No Yes	No For Fodder	Seed availability to be ensured
2.	In case rain is delayed beyond first week of August nearly 10% of transplanted paddy may wither and may need replacement	Maize Castor Black gram Green gram	All Hybrids Hybrids Mash 338 Moong 613, 668	Yes Yes Yes Yes	Yes Yes Yes Yes	Yes No No No	Seed availability to be ensured. Conserve moisture for early Rabi oilseeds and pulses
3.	In a situation of delayed rains beyond August 20	Maize, Sorghum, Pearlmillet may be grown as fodder crops. Dhaincha may be planted as a green manure crop					Dhaincha seed may not be available in sufficient quantity

8. A List of Drought Tolerant and Early Maturing Varieties of Different *Kharif Crops*

Sl. No.	Crop	Suitable varieites
1	2	3
1.	Pearlmillet	For Rajasthan : Pusa 23, RHB 90, Pusa 605, RHB 60, RHB 177, HHB 68, Raj 171, ICMH 356, JBB 2
2.	Sorghum	**For Rajasthan** : CSH6, CSH 13, CSH 9, CSH 16, CSH 14, SPV 96, CSH 17, CSV 15, CSV 10. **For Gujarat** : CSH 9, CSH 13, CSH16, CSV 15, CSV 13, GJ 39, GJ37, GSH 1, GH 40, GH 41. **For Andhra Pradesh** : CSH 16, CSH 9, CSH 13, PSH 1, CSV 13, SPV 462, CSV 15.
3.	Maize	**For Rajasthan** : Mahikanchan, Prakash, Ganga-11, Shakti, Pusa Hybrid 1, Pusa Hybrid 2. **For Gujarat** : Guj Makki 1, Guj Makki 2, Prakash, Pusa Hyb 1, Pusa Hyb 2, Gaurav, Shakti. **For Andhra Pradesh** : Harsha, Deccan 103, Deccan 109, Deccan 107, MMH 133, Prakash, Pro 311, Bio 9681.
4.	Sesamum	**For Rajasthan** : RT 124 **For Gujarat** : RT 54, RT 103 **For Andhra Pradesh** : YLM 11, T 78, Sweta TII
5.	Castor	All available hybrids and varieties **For Andhra Pradesh** : Jyoti, Deepti, Kranti.
6.	Sunflower	**For Rajasthan** : PKVSH 27(H), PKVSH 9 **For Gujarat** : Guj Sunflower, Sungene 85 (H) **For Andhra** : TNAU-SUP-10
7.	Mothbean	**All available improved varieties such as RMO 40, RMO 257**
8.	Cowpea	**For Rajasthan** : V 505, Pusa Komal, Pusa *Do Fasli* **For Gujarat** : GC 3, Pusa Komal, Pusa *Do Fasli*
9.	Green gram	**For Rajasthan** : ML-267, Pusa 105, RMG 62, MUM 2 **For Gujarat** : PDM 11, Pusa 105, BM 4, Guj Mung 3 **For Rajasthan** : WWG 2, Pusa 9072, Madhura 295, IGG 407, IGG 450 **For Madhya Pradesh**: JM -721 TJM-3
10.	Blackgram	**For Rajasthan** : T-9, Pant U-19 **For Gujarat** : T-9, Pant U-19 **For Andhra Pradesh** : T-9, Pant U-19, LBG -17, LBG-402, LBG-20 **For Madhya Pradesh** : Barkha (RBU-38), Azad Urd-3
11.	Horsegram	**For Rajasthan** : AK-21, PHG 9
12.	Foxtail millet	**For Rajasthan** : Gavari, Meera. **For Andhra Pradesh** : Prasad, Krishnadevaraya, Narasiharaya, AK-132-1
13.	Fodder Crops Clusterbean	**For Rajasthan** : DP safed, FS 277, HFG 119, HFG 156, Bundel Guar 1, Bundel Guar 2 **For Gujarat** : Bundel Guar 1, Bundel Guar 2
14.	Pearl millert	For Rajasthan : Raj Bajra Chari 2, Giant Bajra For Gujarat : Bajra, Raj Bajra Chari 2, Giant Bajra For Andhra Pradesh :Giant Bajra, Raj Bajra chari 2

Sl. No.	Crop	Suitable varieites
1	2	3
15.	Sorghum	**For Gujarat :** SSG 59-3, MFSH 3, Harasona, Guj Forage Sorghum 1, HC 136, Raj Chari 1, PC 6, PC 9, PC 23. **For Andhra Pradesh :** PC 6, PC 9, PC 23, HC 136, Raj Chari 1, SSG 59-3, X 998, MFSH 3, Hara sona.
16.	Deenanath grass	**For Rajasthan :** Bundel Deenanath 1, Bundel Deenanath 2. **For Gujarat :** Bundel Deenanath 1, Bundel Dennanath 2. **For Andhra Pradesh :** Bundel Deenanath 1, Bundel Dennanath 2.
17.	Cowpea	**For Gujarat : Bundel Lobia 1, : Bundel Lobia 2, EL 4216, UPC 287, UPC 5286, UPC 8705**
18.	Napier x Bajra Hybrid	**For Gujarat :** Co1 **For Andhra Pradesh :** NB 221, IGFRI 10, CO 1.
19.	Maize	**For Rajasthan :** African tall **For Gujarat :** African tall **For Andhra Pradesh :** African tall
20.	Field bean	**For Gujarat : Bundel sem-1, JLP4** **For Andhra Pradesh : Bundel sem-1, JLP 4**
21.	Guinea grass	**For Andhra Pradesh :** Macuenni Hamail
22.	Cotton	**(i) North Zone (Haryana, Punjab, Rajasthan Western U.P.)** (a) Desi varieties : LD 327, LD 491, HD 107, GR 8, Lohit (b) American varieties: Bikaneri Narma, H 777 **(ii) Central zone (M.P., Maharashtra, Gujarat)** (a) Desi Varieties : Maljari, AKH 4, AKA 8401, Y-1, G.Cot 11, G. Cot 13, G.Cot 17, G.Cot 19. (b) American varieties : Bikaneri Narma, H 777 **(iii) South zone (Karnataka, Tamil Nadu, A.P.)** (a) Desi Varieties : Raichur 51, DB 3-12, K 10, K 12 (b) American : LRA 5166
23.	Sugarcane	Tropical Zone (A.P., M.S. Karnataka, Tamil Nadu, Kerala, Orissa, M.P., Gujarat) Co 740, Co7219, Co8011, Co 8014, Co 86010, Co 86 032, Co 92002, Co 85019, Co 91010, CoM 88121 (Krina) CoG 93076, 85 R 186 (Harita), CoV 92102, CoA 89085 (85 A 261), CoR 80001, CoC 671. Sub Tropical Zone (Punjab, Haryana, U.P., Bihar) Co 1148, CoS 767, Co 7717, Co 87263, BO 91, BO 128
24.	Rice	**Suitable Upland rice varieties** **Suitable across the states :** Tulasi, Vandana, Aditya, Rasi, Jawahar Rice 3-45, Anjali **Andhra Pradesh:** somasila **Chattisgarh:** Dateswari **Kerala:** Harsha **Madhya Pradesh:** Rasmi **Orissa:** Lalitagiri, Udayagiri **Rajasthan:** Vagadhan **West Bengal:** Kanika, Jamini.

Sl. No.	Crop	Suitable varieites
1	2	3
25.	Millets	(i) **Royalseema region of Andhra Pradesh, Parts of Karnataka and Maharashtra** Faxtail millet: Prasad ([illegible]): [illegible] upto end of August. Krishnaadevaraya and Narasimaharaya: produce more stover than prasad. AK 132-1: highly drought tolerant. (ii) **Western Rajasthan** Foxtail millet: SR 11 (Gavari), SR 16 (Meera) (iii) **For M.P. and Chhatisgarh** Little millet: JK-8 Matures in 70-75 days. Suitable for contingency planning. Evolved at JNKVV, Jabalpur. Kodo millet: JK-76, RBK-155
26.	Fodder crops	(i) **For Western Rajasthan (under late onset of Monsoon)** Field bean: Bundel Sem-1 Anjan Grass: Marwar Anjan Yellow Anjan: Marwar Dhaman (ii) **For Saurashtra Region of Gujarat (under late onset of Monsoon)** Marvel grass: GMG-1 Dharaf grass: GAUD-1 (iii) **For Punjab & Haryana (under late onset of Monsoon)** Sorghum (Single cut), HC-136, HC 171, HC-308, HC-6 Sorghum (Multicut), Punjab Sudex, LX-250. Maize: J-1000 Teosinte: TL-1 Cowpea: CS-88 Guar: HFG-156, Guara-80, Bundel Guar-3 Lablab bean: JLP-4 Guinea grass: PGG-10, PSG-101 (iv) **For Western Uttar Pradesh (under late onset of Monsoon)** Sorghum (Single cut): Pusa chari-6, HC-136, UP chari-1, UP chari-2, Pant chari-3 sorghum (Multicut): *Meethi* Sudan SSG-59-3, Pusa Chari-23. Cowpea : UPC-287, Bundel Lobia-2. Lablab bean : JLP-4. (v) **For Madhya Pradesh & Chattisgarh (under late onset of Monsoon)** Sorghum (Single cut): JC-6, HC-171, HC-308 Sorghum (Multicut) JC-69. Cowpea : UPC-287, UPC-5286 Lablab bean: JLP-4.

Short duration rice varieties and hybrids released during last five years included : Virender, CR Dhan 40, Sahyadri 4, Abhishek, Gontra Bidhan, Sushak Samrat, PA 5129, DRBH 2 and GK 500 3

(a) State-wise list of pulse crops varieties is as under :

Mungbean

State	Varieties
Andhra Pradesh	WGG 2, LGG 407, LGG 450, Madhira 295
Assam	Pant Moong 4, Meha
Bihar & Jharkhand	Pant Moong 2, Pant Moong 4, Narendra Moong 1, HUM 1, IPM 02-3
Delhi	MH-02-25, IPM 02-3
Gujarat	Gujarat Moong 4, IPM 02-3, Meha, PKVAKM 4
Haryana	MH 02-15, IPM 02-3, Pusa Vishal
Himachal Pradesh and J&K	Pant Moong 6
Kamataka	HUM 1, China Moong
Madhya Pradesh & Chhattisgarh	BM 4, JM 721, TJM 3, PKVAKM 4, HUM 1
Maharashtra	Phule M 2, TARM 1, HUM 1, PKAKM 4
Orissa	TARM 1, PDM 139, Pusa 9072, OBGG -52, LGG 460
Punjab	ML 613, MH 02-15, IPM 02-3, Pusha Vishal, SML 668, Pant Moong-5
Rajasthan	RMG 268, SML 668, Meha, MH -15, IPM 02-3
Uttar Pradesh & Uttaranchal	Narendra Moong 1, Pant Moong 4, Pant Moong 5
Tamil Nadu	COGG 912, CO 5, VBN (Gg) 2, TM 96-2, Pusa 9072, ADT-3, TM 96-2
West Bengal	Pant Moong 4, Pant Moong 5

Urdbean

State	Varieties
Andhra Pradesh	KU 301, Pant U 31, WBG 26, IPU 2-43, TU 94-2, LBG 685, LBG 402, LBG 623, LBG-709
Assam	Pant U 31, IPU 94-1 (Uttara)
Bihar & Jharkhand	IPU 94-1 (Uttara), Birsa Urd 1, Pant U 30, Pant U 31
Gujarat	TPU 4, AKU 4, GU, PU 311
Haryana	Mash 338, Pant U 31, Sekhar
Himachal Pradesh	Pant U 19, UG 218, Pant U 31, NDU 99-2
Karnataka	KU 301, WBG 26, WBU 108, LBG 402, LBG Manikya, 1, Pant U 30, TU 94-2
Madhya Pradesh & Chhattisgarh	TPU 4, Jawahar Urd 2, Jawahar Urd 3, Pant U 30, Azad urd 3
Maharashtra	TPU 4, Pant U 30, TAU 1, TAU 2, Azad Urd 3, AKU15, AKU 4 (Melghat)
Orissa	KU 301, WBG 26, IPU 2-43
Punjab	IPU 94-1, (Uttara), Krishna
Rajasthan	IPU 94-1(Uttara), Krishna, Pant U31, KU 300
Uttar Pradesh & Uttaranchal	IPU 94-1 (Uttara), Narendra Urd 1, Pant U 30, Pant urd 31, KU 92-1
Tamil Nadu	ADT 5, Pant U 30, Vamban-3, Vamban-4, CO6
West Bengal	IPU 94-1 (Uttara), KU 92-1, WBU 109

Pigeonpea

State	**Short duration varieties**
Punjab	UPAS 120, Pusa 855, Al 201, AL 15, Pusa 992
Haryana	Manak, UPAS 120, Pusa 855, Pusa 922
Delhi	Pusa 992
Rajasthan	Manak, UPAS 120, Pusa 855
West U.P.	Manak, UPAS 120, Pusa 855
Tamil Nadu	CORG 9701, Co 5, Vambean 3
Madhya Pradesh	ICPL 87, GAUT-001 E, TT 401

(b) List of varieties/ Hybrids of sunflower and Castor released by Central Variety Release Committee during 2005-2010

SUNFLOWER

Sl. No.	Name of the variety/ hybrid/ inbred line		Characteristics/ Traits	States
1.	CO-5	V	Yield (Kg/ha) – 1000-17000 Days of maturity – 85-90 Oil content (%) – 39-42	Tamil Nadu
2.	RSFH-I (Tunga)	H	Yield (Kg/ha) – 1300-1600 Days of maturity – 95-100 Oil content (%) – 40-41	Karnataka
3.	HSFH-848	H	Yield (Kg/ha) – 1200-1500 Days of maturity – 95-100 Oil content (%) – 40-42	Haryana
4.	TAS-82	V	Black seed variety Yield (Kg/ha) – 800-1200 Days of maturity – 90-100 Oil content (%) – 40-42	Maharashtra
5.	LSF-8	V	Tolerant to downy mildew, rust and *Alternaria* Yield (Kg/ha) – 1300-1400 Days of maturity – 90-95 Oil content (%) – 36-39	Maharashtra
6.	DRSH –I (PCSH-243)	H	Yield (Kg/ha) – 1300-1600 Days of maturity – 95-100 Oil content (%) – 40-42	All India during *Rabi-summer*
7.	DRSH –I13	V	Yield (Kg/ha) – 1200-1500 Days of maturity – 90-98 Oil content (%) – 36-39	All India
8.	KBSH-53	H	Yield (Kg/ha) – 1700-2700 Days of maturity – 95-100 Oil content (%) – 42-44 Tolerant to powdery mildew	Karnataka
9.	PSH-569		Yield (Kg/ha) – 2000-2200 Days of maturity – 100 Oil content (%) – 40	Punjab

CASTOR

Sl. No.	Name of the variety/ hybrid/ inbred line		Characteristic traits	Area
1.	DCH 519	H	Resistant to *Fusarium* wilt, leaf hoppers Yield (Kg/ha) – 1740-2130 Days of maturity – 105-110 Oil content – 50	Both rainfed and irrigated areas, all over the country
2.	GCH 7	H	Resistant to nemadote-wilt complex Yield (Kg/ha) – 2450 Days of maturity –110-120 Oil content – 49	Irrigated areas of Gujarat
3.	Jwala (48-1)	V	Resistant to wilt, capsule borer and tolerant to Jassid and *Botrytis* Yield (Kg/ha) – 1100-2000 Oil content (%)– 48	All India
4.	GC-3	V	Yield (Kg/ha) – 2340 Oil content(%) – 49.6 Resistant to wilt, tolerant to Macrophomina root rot	Irrigated areas of Gujarat
5.	YRCH-I	H	Yield (Kg/ha) – 1800 Days of maturity –120 -115 Oil content (%) – 49	Tamil Nadu

V= Variety; H=Hybrid

9. Availability of Certified Seed of *kharif* Crops During 2010 from Public Sector Seed Corporations (quintals)

Crops	Requirement	Availability
Paddy	5353906	5999845
Ragi	27241	30874
Kodo	400	429
Maize	755761	903034
Bajra	254608	295094
Jowar	157105	174420
Total Cereals	**6549021**	**7403696**
Urd	133984	188109
Cowpea	21458	21458
Moong	179612	189873
Horse Gram	3728	650
Field Bean	350	350
Moth	15300	5759
Arhar	200677	226985
Rajmash	1102	700
Total Pulses	**556211**	**633883**
Castor	43716	64378
Ground Nut	1825967	2006427
Niger	1517	1069
Til	20502	27488
Soybean	2962515	3580675
Sun Flower	45001	52295
Total Oilseeds	**4899218**	**5732332**
Cotton	192686	253320
Jute	38392	84775
Total Fiber	**231078**	**338095**
Bajra Napier Hybrid	25	25
Guar	76003	84830
Sudan Grass	200	200
Total Fodder	76228	85055
Grand Total	12311756	14193062

10. Contingent Plan for Livestock During Drought

- Livestock suffers even more than human beings during a below normal/ scanty rainfall year. During below normal rainfall year/ drought year there is large scale migration of livestock from states such as Rajasthan to other states in search of fodder. Migration of the animals from Rajasthan to Madhya Pradesh and Uttar Pradesh is an age-old drought escaping strategy. Fodder grasses are also generally transported from Madhya Pradesh Plateu to Maharashtra and Gujarat. The best option is to establish cattle camps in assured irrigation part of the drought prone areas. In case of Rajasthan, these camps should be established along Indira Gandhi Canal where water for drinking and growing fodder is easily available. Facilities like storing densified roughages transported from other parts of the country should also be established adjacent to these camps. In case of severe drought immediate efforts will be needed to grow fodder crops like oats, barley, *Kasni* and *lucern* etc. during September-October in Indira Gandhi Canal areas.
- Resorting to alternate day watering to camel, sheep and goats. Experimental evidences show that even watering twice a week did not have much adverse effect on body weight of the sheep.
- Avoiding long distance grazing during scanty rainfall/ drought period as tired animals need more and frequent watering and feeding
- Periodic health check-up of all animals in the cattle camps and following of recommended vaccination schedule for all major diseases of the livestock should be taken on priority. Deworming will improve fodder and feed absorption.
- Special care is required for productive, lactating and pregnant animals. These animals must be supplemented with additional concentrates.

(a) Ensuring availability of quality fodder

During sub-optimal monsoon/drought, availability of green fodder and natural grasses is drastically reduced. Even the supply of crop residue, normally used as maintenance ration , is reduced whereas demand is increased due to lesser supply of greens. To mitigate/ moderate the situation and to save the animals, following strategy may be adopted in those areas where there is scarcity of rain or drought like situation.

(i) Catch fodder crops of maize, *bajra*, cowpea, *bajra* + cowpea, maize + cowpea may be taken-up on availability of light showers even upto August-September.

(ii) Partially damaged wheat grain may be diverted for feeding to save the

productive animals. However, substandard wheat having very high aflotoxin content should be avoided as the same may result in abortion in pregnant animals.

(iii) Efforts should be made to increase the production of supplements like UMMB (Urea Molasses Mineral Block) lick, which can be easily transported (as animal chocolate) to be offered to the animals along with crop residues to increase their palatability and digestibility.

(iv) Possibility of feeding of tree leaves after lopping and grazing of grasses in forest areas may be explored in consultation with Forest Department. Pods of trees like *Prosopis juliflora* can be collected and supplemented as feed source. These pods contain nearly 13% protein and 25-30% sucrose. In Gujarat, these pods are already used upto 30% of the total ration of the animals. Its leaves can also be used as fodder upto 10% of the ration. Similarly, leaves and fruits of other trees such as *Leucaena leucocephala, Alianthus excels, Prosopis cineraria, Salvadora persica, Acacia spp, Albizia spp,* etc. may be collected to supplement protein content in roughages and moderating fodder scarcity.

(v) Vegetable/ fruit waste may be collected from *sabzi mandies* and factories processing such foods (like SAFAL). These are generally high moisture feeds. In moist form, these could be distributed to farmers around the factories. After sun-drying these could be transported to deficit areas. The nutritive value of these byproducts is reported quiet high. Apart from providing additional feed resources, such type of recycling also helps in reducing the environmental pollution.

(vi) Animal camps may be organized along nearby canals like Indira Gandhi *Nahar* of Rajasthan having adequate drinking water. Farmers along the canals may be persuaded to cultivate fodder crops only and may even be compensated suitably.

(vii) A preliminary estimate indicates that about 20 million tones of rice straw is burnt in Punjab, Haryana and UP alone which creates problem of environmental pollution. This can be properly harvested, bailed, densified and fortified using 4% urea or molasses and transported to areas of fodder scarcity. Standardised machinery for harvesting, bailing, densification and fortification is available in the market. Some budget should be earmarked out of the Calamity Relief Fund or National Calamity Contingency Fund for

implementation of this plan on priority. Perennial grasses like Bhabhar grass (*Eulaiopsis binata*), *guinea grass (Panicum maximum)*, napier hybrid, *Dichanthium annulatum, Chloris gayana* etc. which grow naturally during rainy season in different parts of the country can also be properly harvested, bailed and fortified for animal feeding either at site or transported to scarcity areas.

(viii) Sugarcane tops and dry sugarcane leaves from sugarcane growing areas may be transported, enriched for crude protein content and fed in scarcity areas. In areas where sugarcane crop may be drying due to moisture stress, whole crop can be harvested and used as fodder.

(b) Extended rainfall vis-a-vis green fodder strategy

(i) Fodder crops like rapeseed and mustard, Chinese cabbage, *gobhi sarson* and maize may be sown in September for fodder purpose wherever feasible. These crops will be harvested by November to facilitate the sowing of *rabi* cereals.

(ii) Under irrigated conditions, sowing of *berseem* with Chinese cabbage in last week of September may be taken up for early availability of green fodder. Under less availability of irrigation water *Senji* and *lucern* may be preferred over *berseem* cultivation.

(iii) Dual purpose crops like barely (variety BH 75) may be sown in October. One cutting may be taken for fodder, 50-60 days after sowing and subsequent one left for grain production.

(iv) Oats may be grown in October as multicut fodder to ensure availability of green fodder for longer period.

(v) For quick growth in cereal fodders and higher crude protein contents, application of urea as foliar spray may be taken up.

11. Crop Contingent Plan for Flood Affected Districts of Punjab and Haryana

Heavy rain during the 1st week of July followed by breaches in Ghagar river and Sutlej Yamuna Canel (SYL) resulted in large scale flooding in 5 districts of Haryana viz. Ambala, Kurukshetra, Kaitthal, Fatehbad and Sirsa and 4 districts of Punjab viz. Patiala, Sangrur, Mansa and Ropar Flood water caused extensive damage to the already planted Kharif crops of rice, cotton, maize, moong & fodder crops of jawar, maize and bazra in these districts.

The following contingency plan is suggested to negate/ moderate impact of flood on agriculture in these two States.

- In case the flood water receded within 2-3 days the transplanted paddy crops will survive and regain regrowth. To push up re-growth and to off set the adverse affect of flood water; the farmers may apply one bag of urea per acre when the water is receded completely. In case some transplanted rice plants are washed away, immediate gap filling can be undertaken.
- The farmers may not be having rice nurseries at this stage to re-plant rice in the flood affected areas. However, Basmati rice varieties like CSR-30, Pusa 1121 and PB-1 etc. can be planted up to July end. In case nurseries of these varieties are available for transplant that could be preferred option to raise Basmati rice crop. However, in case nurseries are not available, the farmers may go for direct sowing of rice using zero *Till Seed Drill*. Proper Weed Management will be a priority action in direct seeded rice crop. The States may inform the farmers to follow complete package of practices as suggested by the State Agricultural Universities for effective weed management in direct seeded rice.
- Maize is an excellent substitute for rice in Punjab and Haryana. Several maize varieties including hybrids can be grown up to 1st week of August. The farmers are advised to go for large scale maize cultivation in flood affected districts after receding the flood water.
- Pulses like moong and urd can also be cultivated up to end of July. The area remained un sown because of late receding of flood water, can be covered by short duration crops like moong, urd and cowpea.
- Since fodder crops have been damaged by the floods, therefore, there is a strong case to maintain supply of green fodder for animals in the flood affected districts. The farmers may go for cultivation of maize, maize + cowpea, jowar and bajra as fodder crops to supplement the fodder requirements of milch cattle. Most of the fodder crops can be grown upto 15th August.
- Flood affected areas generally experience out break of human and animal diseases. Special campaigns may be organized for vaccination of animals against out break of major diseases.

12. A Brief Crop Contingent Plan for *Rabi* 2010-11

IMD forecast for South West monsoon indicates extended monsoon scenario and September may be the wettest month. The states may plan from now onwards how

the excess rainwater during the month of September, 2010 can be stored and re-used for early Rabi sowing and for providing life saving irrigation to Rabi crops.

(i) In case rains are received before September 10, *toria* and *taramira* should be sown immediately as catch crops. Agetal variety of mustard can also be grown during September.

(ii) In case rains are received by end September, mixed sowing of wheat +gram and barley+gram can be taken up in almost all rainfed regions. Mustard inter-cropped with gram in rows about 3 m apart is another option. Lentil is another pulse crop which can be raised with 2-3 irrigations. Vegetable crops such as peas, broad bean, French bean and spice crop fennel can be raised with availability of one irrigation.

(iii) In the light of lower availability of surface and ground water for irrigation, the farmers particularly in the Indo-gangetic alluvial plains are advised to resort to zero tillage and strip-till drills wheat cultivation after utilizing the residue moisture available after rice harvest. Zero tilled wheat saves on about 30% water, energy and labour and also gives either equal or enhanced yield compared to conventional tillage. Perfect zero till machines are available in the market. Some budget may be earmarked for supply of such drills on subsidized rate to the farmers. No-till drills and strip-till drills in large numbers should be procured and distributed; and their manufacturing regionalized so that interested farmers or service providers could easily purchase them.

(iv) Resorting to bed planting furrow irrigated system for wheat cultivation wherever feasible and practical. It saves about 30% irrigation water and increases wheat yield. Planting of cauliflower and tomato on beds to save irrigation water.

(v) The area left unsown during *kharif* should preferably be sown with *rabi* fodder crops, oilseeds and pulses taking advantage of extended monsoon rainfall during current year.

(vi) Need based location specific agronomic manipulations such as application of mulch available locally, to conserve moisture, application of P and K as basal dose, reducing N dose and seed rate etc. can be adopted. Special care should be taken for plant protection aspects during drought phase.

(vii) Resorting to cultivation of less water demanding crops and cropping systems in limited irrigation water supply areas. Such crops and their varieties can

be chosen from the *rabi* contingency plans of respective states. For example, wheat variety WH 157 and WH 283 can be successfully cultivated with limited water in Punjab, Haryana and Madhya Pradesh. Kundan variety of wheat is another such example which has comparatively higher dry matter production efficiency per unit water consumed. Vegetable crops such as garden pea (Arkel, Pragati), winter bean and vegetable mustard are the examples requiring less irrigation water.

(viii) Rotavators are efficient tillage equipment for preparing fine seed bed in 1-2 passes saving time and energy used in seed bed preparation, especially crops that need fine tilth. Since in dry farming time available in seed bed preparation and sowing is limited, large sized tractors with matching implements be used for carrying out different farm operations which should be available through custom service. Seed-cum-fertilizer drills/multi-crop planters should be available for sowing different crops during *rabi*. *Utera* after rice should be replaced by drilled crop using zero-till drill or other seed-cum-fertilizer drills that can work. For timely harvesting and threshing of crops in the fields, vertical conveyor reapers for harvesting and high capacity multi-crop threshers and combines are needed on custom hire. This would help in timely clearing of fields and sowing next crop.

ANNEXURE-II

Immediate

No. 38-7/2010-DM
Government of India
Ministry of Agriculture
Department of Agriculture & Cooperation
(Drought Management Division)

Krishi Bhawan, New Delhi
Dated the 7th April, 2010

To,

The Pay & Accounts Officer (Sectt.),
Department of Agriculture & Cooperation,
16, Akbar Road Hutments,
New Delhi.

Subject: Financial sanction for release to the Government of Bihar towards reimbursement of GoI's share of expenditure incurred during Kharif 2009 under the Diesel Subsidy Scheme for drought / deficit rainfall affected areas.

Sir,

I am directed to refer to letter of even Number dated the 23rd March, 2010 regarding sanction of Rs. 21,51,65,802/- to the Government of Bihar on the above subject, under Demand No. 01 - Agriculture Cooperation, 3601 – Grant-in-aid to State Governments, 01 – Grants for Non-plan schemes, 446 – Crop Husbandry – other grants, 04 – Diesel subsidy in drought and deficit rainfall affected areas, 040031 – Grants-in-aid and to say that based on expenditure actually incurred by the State Government, as reported by them, the amount indicated above has been sanctioned to them. As the reimbursement is based on expenditure already incurred by the State Government, submission of Utilization Certificate is not necessary in accordance with Note (1) under Rule 212(1) of General Financial Rules, 2005.

Yours faithfully,

(S. Janakiraman)
Under Secretary to the Government of India
Telefax No.23383309

Copy to information to:

1. Accountant General, Central Revenue, IP Estate, New Delhi.
2. Principal Accounts Officer, Akbar Road Hutments, New Delhi.
3. Director of AGCW & M, AGCR Building, IP Estate, New Delhi.
4. Chief Secretary, Government of Bihar, Patna.
5. Commissioner of Agriculture, Department of Agriculture, Government of Bihar, Patna.
6. Resident Commissioner, Government of Bihar, New Delhi.
7. Sr. PPS to Secretary (A&C) / PPS to AS (GCP) / PS to JS (DM) / DS (DM) / US (P).
8. Budget Section / B&A Section.
9. Guard File / Spare copies.

8/4/10

(S. Janakiraman)
Under Secretary to the Government of India

Issued 8/4

ANNEXURE-III

Immediate

No. 38-7/2010-DM
Government of India
Ministry of Agriculture
Department of Agriculture & Cooperation
(Drought Management Division)

Krishi Bhawan, New Delhi
Dated the 7th April, 2010

To,

The Pay & Accounts Officer (Sectt.),
Department of Agriculture & Cooperation,
16, Akbar Road Hutments,
New Delhi.

Subject: Financial sanction for release to the Government of Tamil Nadu towards reimbursement of GoI's share of expenditure incurred during Kharif 2009 under the Diesel Subsidy Scheme for drought / deficit rainfall affected areas.

Sir,

I am directed to refer to letter of even Number dated the 23rd March, 2010 regarding sanction of Rs. 1,42,96,622/- to the Government of Tamil Nadu on the above subject, under Demand No. 01 - Agriculture Cooperation, 3601 – Grant-in-aid to State Governments, 01 – Grants for Non-plan schemes, 446 – Crop Husbandry – other grants, 04 – Diesel subsidy in drought and deficit rainfall affected areas, 040031 – Grants-in-aid and to say that based on expenditure actually incurred by the State Government, as reported by them, the amount indicated above has been sanctioned to them. As the reimbursement is based on expenditure already incurred by the State Government, submission of Utilization Certificate is not necessary in accordance with Note (1) under Rule 212(1) of General Financial Rules, 2005.

Yours faithfully,

(S. Janakiraman)
Under Secretary to the Government of India
Telefax No.23383309

Copy to information to:

1. Accountant General, Central Revenue, IP Estate, New Delhi.
2. Principal Accounts Officer, Akbar Road Hutments, New Delhi.
3. Director of AGCW & M, AGCR Building, IP Estate, New Delhi.
4. Chief Secretary, Government of Tamil Nadu, Chennai.
5. Commissioner of Agriculture, Department of Agriculture, Government of Tamil Nadu, Chepauk, Chennai-5.
6. Resident Commissioner, Government of Tamil Nadu, Tamil Nadu House, Kautilya Marg, Chankya Puri, New Delhi-110021.
7. Sr. PPS to Secretary (A&C) / PPS to AS (GCP) / PS to JS (DM) / DS (DM) / US (P).
8. Budget Section / B&A Section.
9. Guard File / Spare copies.

Issued

(S. Janakiraman)
Under Secretary to the Government of India

ANNEXURE-IV

No.31-1/2010-DM
Government of India
Ministry of Agriculture
(Department of Agriculture & Cooperation)

Krishi Bhawan, New Delhi
Dated the 28th March, 2011

To

The Pay & Accounts Officer (Sectt.),
Department of Agriculture & Cooperation,
16, Akbar Road Hutments,
New Delhi. – 110001.

Sub: Financial sanction for release to Government of Jharkhand towards reimbursement of Government of India's share of expenditure incurred during kharif 2010 under the 'Diesel Subsidy Scheme in Drought and Deficit Rainfall Affected Areas."

Sir,

I am directed to convey the sanction of the President for payment of Rs.4,21,520 (Rupees Four lakh Twenty One Thousand Five Hundred Twenty only) to Government of Jharkhand towards reimbursement of Government of India's share of expenditure incurred during Kharif 2010 under the "Diesel Subsidy Scheme in Drought and Deficit Rainfall Affected Areas".

2. The release is subject to terms & conditions laid down in this Department's letter No.31-1/2010-DM dated 11.10.2010.

3. The expenditure debitable against the funds available under Demand No.01-Agriculture Cooperation, 3601-Grant in aid to States Governments, 01-Grants for Non-Plan Schemes, 446-Crop Husbandry- Other Grants, 04-Diesel Subsidy in Drought and Deficit rainfall affected areas, 040031-Grants in aid - General.

4. This issues with the concurrence of the Finance Division of the Department of Agriculture & Cooperation vide their Diary No.422/AS&FA dated 23.3.2011.

Yours faithfully,

(S.V. Patil)
Under Secretary to the Government of India

Copy for information to:

1. Accountant General, Central Revenue, I.P. Estate, New Delhi.
2. Principal Accounts Officer, Akbar Road Hutments, New Delhi.
3. Director of ACW&M, AGCR Building, IP Estate, New Delhi.
4. Chief Secretary, Govt. of Jharkhand, Ranchi.
5. Secretary (Agriculture), Government of Jharkhand, Nepal House, Post Doranda, Ranchi ..
6. Director of Agriculture, Government of Jharkhand, Ranchi.
7. Resident Commissioner, Govt. of Jharkhand, Kusum Pur Phari, Vasant Kunj, New Delhi
8. Sr. PPS to Secretary(A&C)/ P.S to Spl. Secretary (DAC)/PS to JS(DM)/Director(DM)
9. Budget Section/B&A Section
10. Guard File/Spare copies.

ANNEXURE-X

Most Immediate

F.No.44(7)PFI/2009-809
Government of India
Ministry of Finance
Department of Expenditure
Plan Finance-I Division

New Delhi, 31/03/2010

To,
The Pay & Accounts Officer,
Department of Expenditure,
Ministry of Finance,
New Delhi

Subject: 'On Account' payment of **Additional Central Assistance (ACA) For other projects** (Grant Component) for the states' Annual Plan 2009-2010.

Sir,

The undersigned is directed to convey the sanction of the President of India to the payment of **Rs. 120000.00 Lakh (Rupees One Thousand Two Hundred crore only)** being the grant component of ACA for Other Projects to the respective States Governments for annual plan 2009-2010 as under:

(Rs in lakh)

Sl. No	State	Projects	Grant released by MOF
1.	Haryana	Central Assistance for Additional cost incurred by the Government of Punjab and Haryana in providing Power to the Agriculture Sector during Kharif 2009	40000.00
2.	Punjab		80000.00

Total For 2 State's (2 Projects)=Rs. 120000 lakh

2. The Payment may kindly be released to the respective State Government immediately. The funds may thereafter be released to the implementing agency without any delay failing which the amounts would be recovered from the State Government with interest for the period of default.

3. The payments are adjustable in the account of the Central Government in the books under the sub-head indicated as below:-

Grant
Demand NO.35
3601-GRANTS-IN-AID TO STATE GOVERNMENTS
02-GRANTS FOR STATE PLAN SCHEMES
101-BLOCK GRANTS
07-ADDITIONAL CENTRAL ASSISTANCE FOR OTHER PROJECTS
0031-GRANTS-IN-AID

4. The payment may be released to the state governments immediately. Loan component is to be raised by the State Govt. from the market directly in line with the recommendations of the Twelfth Finance Commission.

5. The progressive sub-totals for states of central assistance released to the State Governments under the sub-head at para 3 above in the current financial year 2009-2010 so far including amount released in this sanction letter is as follows:

(Rs in lakh)

Sl. No.	State	Block Grant
1	Haryana	72947.34
2	Punjab	114145.10

6. The action taken on this letter may be acknowledged and correctness of the progressive totals be indicated.

Yours faithfully,

(Deena Nath)
Dy. Director(P.F.I)
Ph.23095644

Copy To:

1	Finance Secy./ Plng Secy, Govt Concerned
2	Accountant General (A&E), State Concerned
3	DEA Budget(States Section), North Block, New Delhi
4	Plng. Commn. SP Divn./FR Divn., New Delhi
5	Shri R. Sridharan,(SP), Planning Commission, New Delhi
6	Secy. RBI, Central Office, Mumbai
7	Manager, RBI, CAS, Nagpur
8	Resident Commissioner, Govt. Concerned, New Delhi
9	Hindi Section for Hindi Version

(Deena Nath)
Dy. Director(P.F.I)
Ph.23095644

ANNEXURE-VI

COMMITTEE ON AGRICULTURE
(2011-12)

MINUTES OF THE SIXTEENTH SITTING OF THE COMMITTEE

The Committee sat on Wednesday, the 14 December, 2011 from 1500 hours to 1600 hours in Committee Room 'D', Parliament House Annexe, New Delhi.

PRESENT

Shri Basudeb Acharia - *Chairman*

LOK SABHA

2. Shri Narayansingh Amlabe
3. Shri Thangso Baite
4. Smt. Ashwamedh Devi
5. Shri Sk. Nurul Islam
6. Shri Naranbhai Kachhadia
7. Shri Premdas
8. Shri Devji M. Patel
9. Shri Jagdish Thakor
10. Shri Hukmadeo Narayan Yadav

RAJYA SABHA

11. Shri Shashi Bhusan Behera
12. Shri Narendra Budania
13. Shri Vinay Katiyar
14. Shri Mohd. Ali Khan

SECRETARIAT

1. Shri P.V.L.N. Murthy - Director
2. Shri P. C. Koul - Additional Director
3. Shri C. Vanlalruata - Deputy Secretary

2. At the outset, the Chairman welcomed the members to the Sitting of the Committee. The Committee, thereafter, took up for consideration the Draft Report on Action Taken by the Government on Observations/Recommendations contained in the Eleventh Report on 'Deficient Monsoon and Steps Taken by the Government to Mitigate its Impact on Agriculture Sector'.

3. After some deliberations, the Committee adopted the draft Report without any modifications. The Committee then authorized the Chairman to finalise the above Draft Report after getting it factually verified from the concerned Ministry and present the same to the Parliament.

*4. xxx xxx xxx xxx

*5. xxx xxx xxx xxx

*6. xxx xxx xxx xxx

The Committee then adjourned.

***** *Matter not related to this Report.*

ANNEXURE-VII

(Vide Para 4 of Introduction of the Report)

ANALYSIS OF ACTION TAKEN BY GOVERNMENT ON THE ELEVENTH REPORT (15th LOK SABHA) OF COMMITTEE ON AGRICULTURE (2009-10)

(i)	Total number of Recommendations		18
(ii)	Recommendations/Observations which have been Accepted by the Government		
	Para Nos.	3.50, 3.51, 3.58, 3.59, 3.60, 3.61, 3.63, 3.64, 3.65, 3.66 and 3.67	
	Total		11
	Percentage		61%
(iii)	Recommendations/Observations which the Committee Do not desire to pursue in view of the Government's replies		
	Total		NIL
	Percentage		0%
(iv)	Recommendations/Observations in respect of which replies of the Government have not been accepted by the Committee		
	Para Nos.	3.52, 3.53, 3.54, 3.55, 3.56 and 3.57	
	Total		6
	Percentage		33%
(v)	Recommendations/Observations in respect of which Final replies of the Government are still awaited		
	Para No.	3.62	
	Total		1
	Percentage		6%