

Contingency Crop Planning of Nuapada District for Kharif 2022

- 1) During adverse period of weather emphasis will be given on availability of both paddy & non-paddy seed to mitigate the drought. Drought resistant & tolerant variety is given importance to overcome this type of situation. Prepositioning of seed, fertilizers & pesticide are ensured properly. 10% of total seed requirement may be available in stock in designated godown of Deputy Director of Agriculture, Nuapada.
- 2) Pest surveillance activities are strengthening with the help of scout i.e. Krushak Sathi under e-pest surveillance programme under Rkvy. The Scouts are visiting the area & report the incidence of disease & pest situation of that locality through a prescribed format again that is transmitted to Deputy Director of Agriculture (Plant Protection) Bhubaneswar in every Wednesday. Based on this report the farmers are advised to go spraying of pesticides.
- 3) Crop weather watch group is functioning & recording the rainfall data which is collected from District Emergency Office on regular basis.
- 4) Functioning of control room in district level as well as block level has been started to monitor weather situation or any unusual crop situation by the person concerned on duty irrespective of holiday. Immediately reporting to the Directorate, if there is any type of unusual weather calamities situation is noticed.
- 5) Nuapada district is a drought prone district. In this district every alternate year there is a chance, more vulnerable to drought like situation.

Such type of adverse effect on crops can be combated in two ways.

- (1) Drought Preventive Measure.
- (2) Contingent Measure/Drought Ameliorative Measure.

(1) Drought Preventive Measure

The forecast of various models for 2021 monsoon indicates the chance of deficit rainfall. As per the expected El Niño, the chance of deficit monsoon is high in August & September.

Accordingly, thrust should be given on action plan for terminal drought early season drought in order of priority.

Among the different kharif crops the upland rice is most affected by drought. So diversified land use with low duty non-paddy crops is the suitable option.

Planning should be made accordingly in the beginning of Kharif So that judicious use of water, land & crops on that particular locality. Some of importance preventive measures that can be adopted in the early season to mitigate the impact of drought & augment sustainable crop production are elaborated below.

2) General Contigent Measure

- 1) Database of the farmers should be maintained at in district level for selection of beneficiary for real time supply of seeds fertilizer at the time of need.
- 2) Positioning of seed, fertilizer & other input should be regularly monitored online for effective supply to farmers as the time of need.
- 3) Scientists of KVK & departmental officers may be involved in regular, Inspection, monitoring & managing the drought situation with each one given responsibly for an area.

For irrigated area

- 1) Lift irrigation point should be repaired to working condition.
- 2) Mobile service for repairing of LI points should be facilitated.
- 3) Command area must be increased by rational distribution. Adopt SRI method of transplanting which require less water, less seed.
- 4) Tail and farmer should avoid growing of Rice.
- 5) There is a provision of supply of pump set @ 50% subsidy under NFSM Scheme. The farmer may avail the opportunity ti irrigate his field when there is scarcity of water.

UPLAND

- 1) Selection efficient crop & cropping system matching the length of growing season. Some of the promising non-rice crops for rainfed uplands are Maize, Arhar, Black gram, Green Gram, Cotton, Groundnut, Sesame etc.
- 2) Choose short duration paddy variety like khandagiri, Ankit, Sahabhagi Dhan.
- 3) Growing short duration variety like Sahabhagidhan (100 days) Mandakini (100 days),Jyotimayee (95 days),Siddhant,Khandagiri & Parijat.

- 4) Perform off season ploughing of inversion type to conserve moisture, reduce pest and weed problem & to facilitate early sowing.
- 5) Adopt intercropping/mixed Cropping System in recurrent drought area as mention below.

ARHAR BASED

| Sl No. | Intercropping | Ratio | Specification | Distance of intercropping |
|--------|---------------------------|-------|---------------|---------------------------|
| 1 | Arhar + Groundnut | 2:6 | 30-210-30 | 30 |
| 2 | Arhar+Greengram,Blackgram | 2:4 | 30-150-30 | 30 |
| 3 | Arhar + Rice | 2:5 | 30-100-30 | 30 |
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MAIZE BASED

| Sl No. | Intercropping Maize Based | Ratio | Specification | Distance of intercropping |
|--------|---------------------------|-------|---------------|---------------------------|
| 1 | Maize + Arhar | 2:2 | 30-90-30 | 30 |
| 2 | Maize + Cowpea | 2:2 | 30-90-30 | 30 |

RICE BASED

| Sl No. | Intercropping Maize Based | Ratio | Specification | Distance of intercropping |
|--------|---------------------------|-------|---------------|---------------------------|
| 1 | Rice + G.nut | 4:1 | 4:1 | 15 |

(6) Adoption of integrated farming system which include apart from Crop component it also including dairy, pisciculture, Bee keeping,mushroom, fruit trees will diversify production and impart stability to production system.

A. Early Season Drought (June 10- July 31)

Scenario-1 Early onset & sudden stopping of monsoon.

Under such situation there is more mortality of sprouts seedlings & difficulties in sowing.

(a) UPLAND

- Apply a portion of FYM seed furrows with suitable biofertiliser (azospirillum) at the time of sowing to conserve moisture to prevent seeding mortality from early drought.

- Grow short duration rice varieties like Mandakini, Khandagiri, Siddant, Heerra etc.
- Sow non-paddy crops like ragi, Maize, arhar, greengram, blackgram, cotton etc. in space of upland rice.
- Adopt broad bed & furrow (BBF) method of planting for growing groundnut, vegetables for facilitating drainage of excess water during high intensity rainfall.
- Weeds can be taken care by mechanical weeding in case of failure of rainfall.

Medium/low land

- Green manuring may practiced before monsoon.
- Under late sown condition choose rice varieties maturing relatively 10 days less than prescribed recommend varieties.
- Rain water management in medium & low land is crucial for mitigation of drought & improvement in production.

Drought Ameliorative Measure/Contingent Measure

It is difficult to define the exact crop and weather scenario during an anticipated drought or dry spell. However, there are three distinct periods of kharif season relating to crop growth stage and associated farm practices.

A. Early season drought (June 10 to July 31)

Scenario 1: Early onset and sudden stoppage of monsoon.

Scenario 2: Late onset, uplands covered till mid-july.

B. Mid season drought (August 1 to September 15)

Scenario 3: Non-paddy crops in uplands affected.

Scenario 4: Beushaning of Rice delayed.

Scenario 5: Transplanting of rice delayed/seedling over aged.

Scenario 6: Beashaned/transplanted rice affected at early.

Medium and low land

- If rice plant population is less than 50%, resow the crop. Select rice varieties maturing at least 10-15 days earlier than the recommended varieties.

- If the rice plant population is more than 50% carry out weeding, and adjust the plant population by khelua (removing and redistributing the hills) and clonal propagation.
- In saline soil use FYM/ green leaf manure, use aged seedlings for transplanting, gap fill the crop by clonal propagation.

Scenario 2: Late onset, uplands not covered till mid-july

- Maize, cowpea may be grown in the first week of August to meet the fodder crisis.
- Apply full P.K and 20% N of the recommended dose as basal along with well decomposed organic manure mixed with suitable biofertiliser for early seeding vigour.
- Major emphasis should be given on in situ rain water conservation, harvesting excess run off for its recycling to make provision for life saving irrigation.

C. Mid season drought (August 1 to September 31)

Scenario 3: No-paddy crops in uplands affected

- Complete hoeing and weeding in non-paddy crop fields to provide dust mulch.
- Weeding groundnut after 45 days of sowing disturbs the pegging process. Under such a situation prune the weeds with the help of sickle. Apply post emergency spray of quizalofop ethyl 5% EC@ 0.05 kg/ha in 500 liter of water (2ml/liter of water) at 20-25 day after sowing to control grassy weeds in groundnut.
- Foliar application of 2% urea at pre-flowering (25 days after sowing) and flowering stage of greengram and blackgram is helpful to mitigate drought.
- Withhold top dressing of nitrogen, Resume top dressing after receipt of rain.
- Spray planofix or celmone 10 ppm (2ml in 9 liter of water) at 45 days and 20ppm (4 ml in 9 liter of water) 10 days later to prevent boll seeding in cotton.

Scenario 4: Beushaning of rice delayed

- Do not practice beushaning (blind cultivation) in rice, if the crops is more than 45 days old. Weed out the field without waiting for rainfall.
- Go for gap filling using seedling of same age clonal tillers to have uniform distribution of plant.
- Strengthen the field bunds and close the holes to checks seepage loss.
- Withhold N fertilizer application up to receipt of rainfall.

Scenario 5: Transplanting of rice delayed

Generally in this case rice seedlings are over aged.

- Seedlings up to 45 and 60-70 days old can be transplanted in case of medium and late duration rice varieties, respectively without much reduction in yield.
- Pulverize the main rice field in dry conditions, if it is not ploughed earlier to save time in final puddling.
- Apply 50% recommended nitrogen at the time of transplanting.
- Apply life saving irrigation to maintain the nursery seedlings in good health.

Scenario 6: Beushaned/transplanted rice affected at early vegetative stage

- Provide protective irrigation through recycling of harvested rain water.
- Withhold N fertilizer application up to receipt of rainfall.
- Strengthen the field bunds and close the holes to check seepage loss.

C Late season Drought (September 16 to October 31)

- Provide protective irrigation through recycling of harvested rain water at critical stages such as flowering and grain filling in alternate furrows in wide spaced crops.
- Late sown crops like cowpea, Maize, greengram & blackgram may be harvested for fodder purpose.

Medium and low land rice affected at vegetative/ reproductive stage

It occurs as a result of early cessation of monsoon rains. The management practices are as follows.

- Provide protective irrigation through recycling of harvested rain water mainly at critical growth stages as flowerings, grain fillings etc.
- The idea pre-rabi crops with residual moisture condition are horsegram, castor, blackgram, ricebean and sesamum.
- Pre- position inputs, particularly seeds & fertilizers for the rabi crops.