Study of Adoption on TN-IAMP Black Gram Growers in Madurai District of Tamil Nadu

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Received: 10.9.2020 | Revised: 17.10.2020 | Accepted: 22.10.2020

ABSTRACT
The World Bank Supported TN IAM (Irrigated Agriculture Modernisation Project) is a follow up of IAMWARM (Irrigated Agriculture Modernisation and Water-Bodies Restoration and Management Project). Normally Western Ghats are receiving limited average annual rain fall of about 925 mm, lower than the national average 1200 mm. The project will adopt climate-resilient approaches that promotes sustainable use of land and water resources. This study was undertaken in the Madurai district of Tamil Nadu state during 2019. Totally 8 villages were selected from the study area. The respondents of 120 TN-IAMP black gram beneficiaries were selected using purposive sampling method. Technologies reveals that (100.00%) of the beneficiaries had adopted recommended variety (VBN 6). Regarding land preparation (47-70%) of the beneficiaries were adopted recommended practices on black gram and correct sowing of season. Majority (65-70%) of the beneficiaries were adopted the recommended practices on harvest indices.

Keywords: Adoption, TN-IAMP, Beneficiaries & Recommended Practices.

INTRODUCTION
The World Bank Supported TN IAM (Irrigated Agriculture Modernisation) Project is a follow up of IAMWARM (Irrigated Agriculture Modernisation and Water-Bodies Restoration and Management) Project which has made significant development impacts in the state by modernising irrigation infrastructure, improving water use efficiency, enhancing yields and productivity of agriculture in a climate resilient production systems, diversification towards high value crops, strengthening the institutional reforms through Participatory Irrigation Management (PIM) and Water Users Association (WUA). Tamil Nadu is one of the water starved states in India endowed with only 3 percent of the water resources in India. The state located in the rain shadow region of the Western Ghats is receiving limited average annual rain fall of about 925 mm, lower than the national average 1200 mm.

The interventions of this component are aimed at increasing productivity of mostly key crops, promoting diversification of agriculture production systems, enhancing resilience and improving farmer access to markets in project sub-basins. The project will adopt climate-resilient approaches that promotes sustainable use of land and water resources. The component consists of three sub-components,

1. Agricultural intensification and diversification
2. Improving alternative livelihood sources through livestock and inland aquaculture
3. Marketing, value-addition and post-harvest management.

MATERIALS AND METHODS
This study was undertaken in the Madurai district of Tamil Nadu state. Madurai District of Tamil Nadu was purposively selected for this study because, TN-IAMP was implemented under Tamil Nadu Agricultural University. In this district, areas were covered under sirumalaiyar and sathaiyar sub-basin since its cover a more ayacut area. Madurai district consists of 7 Taluks and among this taluks Alanganallur and Vadipatti blocks were selected for this study. Among these blocks totally 8 villages were selected based on TN-IAMP beneficiaries identified. The respondents of 120 TN-IAMP black gram beneficiaries were selected using purposive sampling method and presented in table 1.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Village</th>
<th>No. of Respondents selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Thevaseri</td>
<td>17</td>
</tr>
<tr>
<td>2.</td>
<td>Muduvarpatti</td>
<td>17</td>
</tr>
<tr>
<td>3.</td>
<td>Sukkampatti</td>
<td>8</td>
</tr>
<tr>
<td>4.</td>
<td>Kutladampatti</td>
<td>19</td>
</tr>
<tr>
<td>5.</td>
<td>Semminipatti</td>
<td>30</td>
</tr>
<tr>
<td>6.</td>
<td>Katchaikatti</td>
<td>6</td>
</tr>
<tr>
<td>7.</td>
<td>Chokalingapuram</td>
<td>9</td>
</tr>
<tr>
<td>8.</td>
<td>poochampatti</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>120</td>
</tr>
</tbody>
</table>

FINDINGS AND DISCUSSION
Adoption of TN-IAMP black gram beneficiaries
The extent of adoption is the degree to which a farmer accepts and adopts a new technology. Though various technologies were introduced and taught to the farmers, it is important that those technologies were fully accepted and adopted by the farmers in their field characterized by continuous adoption of those technologies.

Practice-wise level of adoption

<table>
<thead>
<tr>
<th>S.No</th>
<th>Practices</th>
<th>Adoption level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>1</td>
<td>Crop production technologies</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Land should be free from volunteer plants like dry root rot</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>2. Make the land to fine tilth condition</td>
<td>79</td>
</tr>
<tr>
<td></td>
<td>3. Mid-July to mid-august and mid-January to mid-February is suitable season for black gram cultivation</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>4. VBN 6 is variety used for black gram cultivation</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>5. Duration of VBN 6 is 65-70 days</td>
<td>120</td>
</tr>
</tbody>
</table>
6. 20 kg/ha seed required for black gram cultivation  
7. 45*10 cm is spacing followed for black gram cultivation

### II Crop protection technologies

8. Sowing should be done in proper season  
   - 80 66.60
9. Crop rotation should be done  
   - 81 67.50
10. Fixation of light traps to attract gram pod borer adult stage  
    - 70 58.30
11. Removal of yellow mosaic virus affected plants from the field to control viral diseases  
    - 51 42.50
12. Seed treatment with *tricoderma viride* @ 4g/kg or *pseudomonas fluroscenes* @ 10g/kg of seeds to control dry root rot  
    - 60 50.00
13. Fix the pheromone trap @ 12no/ha to control borer  
    - 57 47.50
14. Spraying of carbendazim @ 2.5 kg/ha on plant parts to control powdery mildew disease in black gram  
    - 61 50.80

### III Harvest and storage

15. Pods turns brown or black with hard seeds inside pods are harvesting indices for black gram  
    - 85 70.80
16. Plants are uprooted by hand or cut with sickle at the bottom of the plants  
    - 80 66.60
17. Beating with flexible bamboo stick or by machinery to separation of seeds from harvested plants  
    - 81 67.50
18. Drying of seeds by open sun dry up to 8-9 % of moisture content in seeds  
    - 75 62.50
19. Discoloured and broken seeds should be eliminated before grading  
    - 68 56.60
20. Store the seeds in gunny bags or cloth bags for short term storage (8-9 months) with seed moisture of 8-9%  
    - 65 54.10

(Multiple response obtained)

### Adoption level on crop production technologies

It could be observed from the above Table 2, according to crop production technologies reveals that (100.00 percent) of the beneficiaries had adopted recommended variety (VBN 6) and three-fourth of the beneficiaries (75.00 percent) have adopted recommended seed rate. Regarding land preparation (47-70 percent) of the beneficiaries were adopted recommended practices on black gram and correct sowing of season. Maximum number of beneficiaries (47-65 percent) were adopted recommended rate on usage of chemicals / bio-fertilizers for seed treatment, sowing, spacing and cultural practices (weeding, soil digging and etc.)

### Adoption level on crop protection technologies

It could be observed from above Table 2, regarding crop protection (50-81 percent ) of the beneficiaries were adopted the recommended practices like cultural control (sowing in proper season and crop rotation), physical control (fixation of traps for pest and collection of pest), biological control (using bio control agents) and chemical control (recommended chemicals).

### Adoption level on harvest and storage

It could be observed from above Table 2, Majority (65-70 percent) of the beneficiaries were adopted the recommended practices on harvest indices (pods turns brown to black colour), harvest methods (hand removal / sickle method) and processing (removal of seeds). With regard to drying process adoption rate of beneficiaries (62.50 percent) were practiced. And (50-70 percent) of the beneficiaries possess storage (with gunny bags for short term).

### CONCLUSION

From the above findings, majority of TN-IAMP beneficiaries (97.50 percent) were categorised under low to medium level of adoption on recommended practices, because of most of beneficiaries were functionally literate to middle school level, medium level of social participation, information seeking behaviour and innovativeness. In future, beneficiaries might to follow TN-IAMP for another five years or more which leads to good
result in knowledge and increasing the rate of adoption rate on future on this technologies.

REFERENCES

www.iamwarm.gov.in


