• **Objective 4.**

• 4.1 Involve farmers and other stakeholders in the research to develop improved weed management practices in cassava and

• 4.2 Empower extension services, primarily the ADPs but also NGOs, agro-dealers, and spray service providers, to provide farmers with the knowledge they need to improve weed management practices.

By

*Godwin Atser, Mary Agada, Moses Okwusi, Grace Sokoya and Toye Ayankanmi*
Cassava Weed Management Project

80 farmers

20 SSPs and agro dealer

One extension agent

A farmer with Onfarm trial

Onfarm model
Projected reach per site on onfarm trials in 2016

One on farm, one EA

80 farmers

80 farmers tell 2 or 3 friends = 200 farmers

50 x 80 = 4000

50 sites X 200 farmers = 10,000 farmers
## Cassava Weed Management Project

<table>
<thead>
<tr>
<th>PLATFORMS</th>
<th>TOTAL PERSONS REACHED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flickr</td>
<td>193</td>
</tr>
<tr>
<td>LinkedIn</td>
<td>1565</td>
</tr>
<tr>
<td>Facebook</td>
<td>1805</td>
</tr>
<tr>
<td>Twitter</td>
<td>84601</td>
</tr>
<tr>
<td>Pinterest</td>
<td>5725</td>
</tr>
<tr>
<td>Slideshare</td>
<td>8103</td>
</tr>
<tr>
<td>Website</td>
<td>1851</td>
</tr>
<tr>
<td>Whatsapp</td>
<td>256</td>
</tr>
<tr>
<td>Newspapers – (Journalists)</td>
<td>208</td>
</tr>
<tr>
<td>YouTube</td>
<td>760</td>
</tr>
<tr>
<td>Cassava matters newsletter</td>
<td>3005</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>108072</strong></td>
</tr>
</tbody>
</table>

Total farmers reached through onfarm and field activities: **7121**

**Grand total**: **115193**
Farmers reached through onfarm field activities by sex in 2016

- Female: 2229
- Male: 4892
- Total farmers: 7121
Sites Selection

Isuikwuato

Bende
Cassava Weed Management Project

Community Entrance

Village head of Irawo

Opinion Leader in Agunrege
Visit to the palace of HRH Eze Valentine C. Ohunta, Traditional Ruler of Umuokeigbo Umuigu Autonomous Community in Ikwuano LGA

Visit to the Palace of HRH Eze Ogo Agwu Uka Traditional ruler of Ndiememe Abam Autonomous Community in Arochuchwu LGA
Cassava Weed Management Project

Kickoff of activities

Kickoff at Ariam

Kickoff at Ugwueke
Farmer participation is key

Ozu abam

Ndiememe
Cassava Weed Management Project

Training of extension service providers

Bayer supported training

IITA Ibadan
Oke-Ipin onfarm trial site
Weed control in cassava maize intercrop: Treated vs Untreated at Iporin
Farmer field days

Umuigu

Agunrege
Team building and continuous meeting with extension service providers

NRCRI Abia
Deepening of public/private sector engagement with Syngenta and Monsanto

Syngenta

Monsanto
Cassava Weed Management Project

The Minister of Agriculture and Rural Development, Chief Audu Ogbe (Left) being briefed on Cassava Weed Management Project

WCRTC
National Cassava Summit
Africa RISING
Weed Society of Nigeria etc

CWMP with Oyo Commissioner for Agric on TV talking weed science and food security
Farmers’ evaluation of field trials

Idi-Ata

Iporin
Abia: Cassava-Maize– Cleanliness of field

Mean cut-off

Scores

Treatments
Benue: Cassava-maize– Cleanliness of field

Mean cut-off

Scores

Treatments
Ogun: Cassava-Maize- Cleanliness of field

Treatments
Oyo Cassava-Maize - Cleanliness of field

Mean cut-off

Treatment

Implementing partners
Cleanliness of field in cassava-maize across the four states

Mean cut-off
Related-Samples Friedman's Two-Way Analysis of Variance by Ranks

- Fierce_MP_CF: Mean Rank = 4.16
- Mov_MP_CF: Mean Rank = 4.16
- PrinG_MP_CF: Mean Rank = 4.09
- Lag_MP_CF: Mean Rank = 3.98
- Fierce_MG1_CF: Mean Rank = 3.98
- Mov_MG1_CF: Mean Rank = 3.83
- Gard_PG_MP_CF: Mean Rank = 3.79

Frequency

Total N: 208
Test Statistic: 9.751
Degrees of Freedom: 6
Asymptotic Sig. (2-sided test): .136

1. Multiple comparisons are not performed because the overall test retained the null hypothesis of no differences.
Abia: Cleanliness of field in casava mono

Scores

Treatment
Benue: Cleanliness of field in cassava mono
Ogun: Cleanliness of field in cassava mono

Scores

Treatments

Merlin_T Fusilade_Cobra_CF
Movon_MaisterPower_CF
Fierce_Glyphosate_CF
Merlin_T LongH_Hoe_CF
PrimextraG_Maister_Power_CF
Fierce_SelectMax_Cobra_CF
SecorPlus_MaisterPower_CF
PrimextraG_LongHandl_Hoe_CF
MerlinT_ShortHandl_Hoe_CF
Gardoprim_Glyphosate_CF
primextraG_Movon_Hoe_CF
Fierce_LongHandl_Hoe_CF
Movon_Fusilade_Cobra_CF
MerlinT_SmallMantis_CF

Implementing partners
www.cassavaweed.org
Combined: Cleanliness of field in cassava mono

Scores

Treatments

Related-Samples Friedman’s Two-Way Analysis of Variance by Ranks

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Mean Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merlin Select Max Cobra_CF</td>
<td>4.04</td>
</tr>
<tr>
<td>Fierce Select Max Cobra_CF</td>
<td>4.09</td>
</tr>
<tr>
<td>Fierce Master Power CF</td>
<td>4.11</td>
</tr>
<tr>
<td>Primestar Select Max Cobra_CF</td>
<td>4.03</td>
</tr>
<tr>
<td>SensorPlus Select Max Cobra_CF</td>
<td>3.95</td>
</tr>
<tr>
<td>SensorPlus Long Handl Hoe_CF</td>
<td>3.93</td>
</tr>
<tr>
<td>Merlin Fusilade Cobra_CF</td>
<td>3.85</td>
</tr>
</tbody>
</table>

Total N: 164
Test Statistic: 2.866
Degrees of Freedom: 6
Asymptotic Sig. (2-sided test): 0.226

1. Multiple comparisons are not performed because the overall test retained the null hypothesis of no differences.
Table 8 h: Farmers distribution based on use of preemergence herbicides

<table>
<thead>
<tr>
<th>State</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Abia</td>
<td>133</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Benue</td>
<td>131</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Ogun</td>
<td>35</td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>82</td>
<td>82</td>
</tr>
<tr>
<td>Oyo</td>
<td>23</td>
<td>233</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>14</td>
</tr>
</tbody>
</table>

**NR: No Response**
### Table 8: Farmers distribution based on use of postemergence herbicides

<table>
<thead>
<tr>
<th>State</th>
<th>No</th>
<th>Yes</th>
<th>Total</th>
<th>NR</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abia</td>
<td>132</td>
<td>23</td>
<td>155</td>
<td>25</td>
<td>180</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benue</td>
<td>54</td>
<td>152</td>
<td>206</td>
<td>4</td>
<td>210</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td>26.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td>73.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ogun</td>
<td>38</td>
<td>89</td>
<td>127</td>
<td>82</td>
<td>209</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td>29.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td>70.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oyo</td>
<td>43</td>
<td>207</td>
<td>250</td>
<td>20</td>
<td>270</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td>17.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td>82.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NR</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NR: No Response**
Cassava Weed Management Project

Agrodealer shops in Benue

Gang sprayers in Oyo
IITA AWARD 2016

Reaching farmers with weed management technologies: Approaches that work

Introduction
Weeds are major constraints to cassava productivity, contributing to 50–90% yield losses (Chukwu et al., 2004). In Nigeria and elsewhere in Africa, yields of cassava have been hampered by a loss of 10–15 tons per ha as opposed to more than 20 tons being obtained in Asia. Besides lowering yields, weeds reduce the amount of land available for food crops and thus lead to reduced food production and increased poverty among farmers. In some cases, children are withdrawn from school to support weeding. One way to control weeds and reduce the drudgery associated with manual weeding is the use of integrated weed management which includes the application of safe and environmentally friendly herbicides that have proven to be more efficient and cost effective than hand and free weeding.

Materials and methods
The IITA/Cassava Weed Management Project screened 20 pros and 1000 emergency herbicides in 2014 for effectiveness in weed control in cassava. Seven pros and 6 emergency herbicides were finally selected for on-farm demonstration in 2015. The agronomy of cassava was also examined with respect to tillage, cassava variety, plant population, fertilization, and irrigation. The project also screened several mechanical weeding equipment and selected a mechanical weeder and very hand tool. The best options from the herbicides, agronomy and mechanical weeding tools have been put into an integrated package that is being tested on 50 sites in four states in Nigeria (Chukwu et al., 2016).

Results
Across the 50 sites, four thousand farmers are mobilized to visit the sites and gain knowledge on weed control. Also, as each of the 50 sites, the extension service providers are being trained in groups of 20. Each of these 50 sites will reach 50 farmers per year with insights on weed control. The project is using the ‘two plus one’ approach where farmers will be trained and baseline data will be collected. The project has been using this approach for several years. The project is targeting 10 farmers per site (total of 500). The project will train 2000 farmers this year, and many more over the next three years. The project will train a total of 6000 farmers, which is the project’s target.

Conclusion
The use of multiple platforms such as the extension service providers to reach farmers on traditional extension system is a game changer, which should be explored by projects for sustainable scaling. This is because of their ability to reach a large number of farmers at scale cost.

References

IITA is a member of the CGIAR System Organization
www.iita.org

www.cassavaweed.org