



Innovating for a Greener Future

GLOBAL CASES

INTERNATIONAL BUSINESS DEPARTMENT

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2015

CONTENT



WHY global?

- Opportunity to solve a global problem



What we've achieved

- Global cases: Ghana, Thailand



Summary

- Call for collaboration

WHY GLOBAL?

THE NEED TO GROW

- Opportunity to solve a global problem



"In order to discover new lands one must lose sight of the shore"

Global cases: **Ghana**

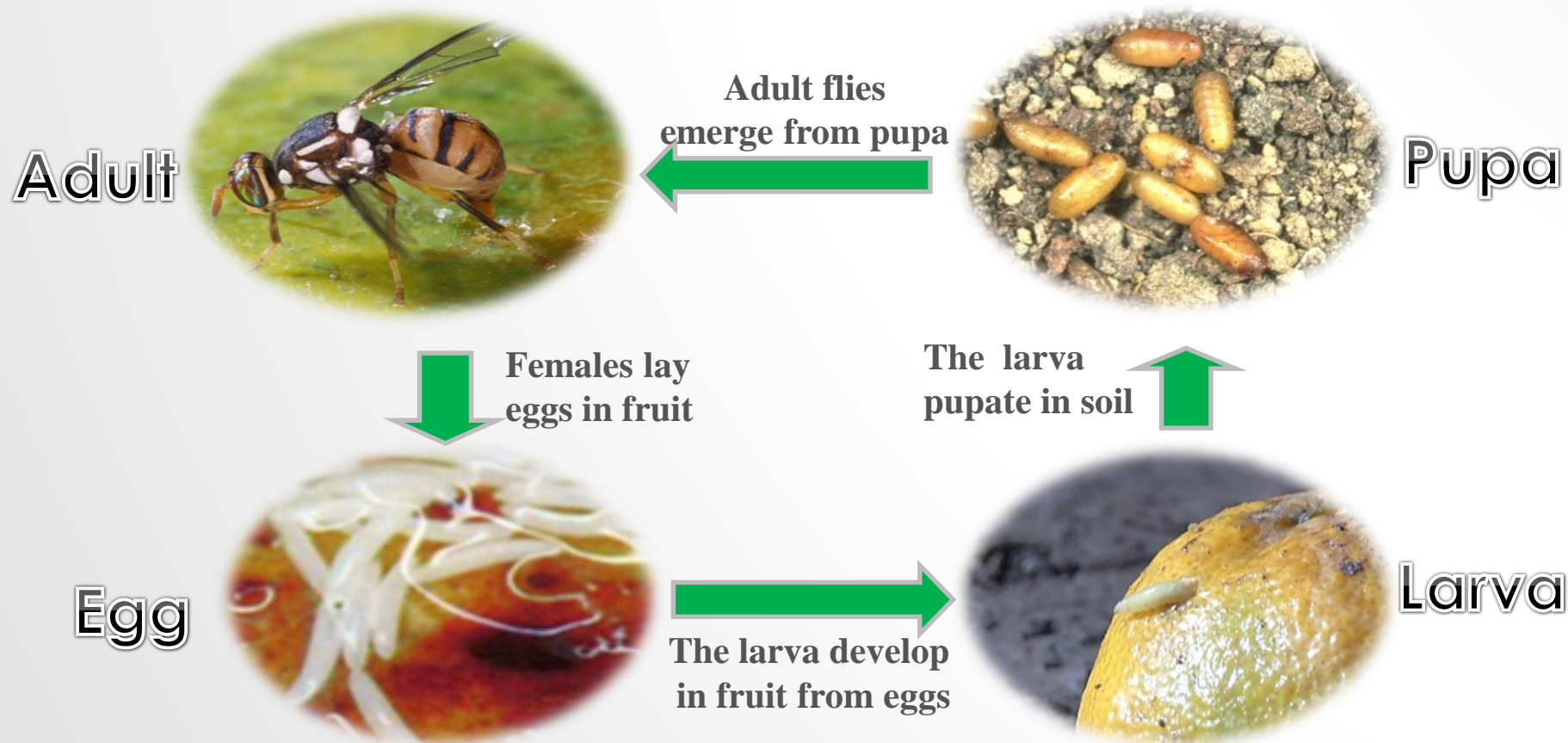
Major FF species in West Africa



Oriental Fruit Fly
Bactrocera dorsalis (Hendel)

Global cases: **Ghana**

Understanding local FF dynamics



Bactrocera dorsalis (Hendel)

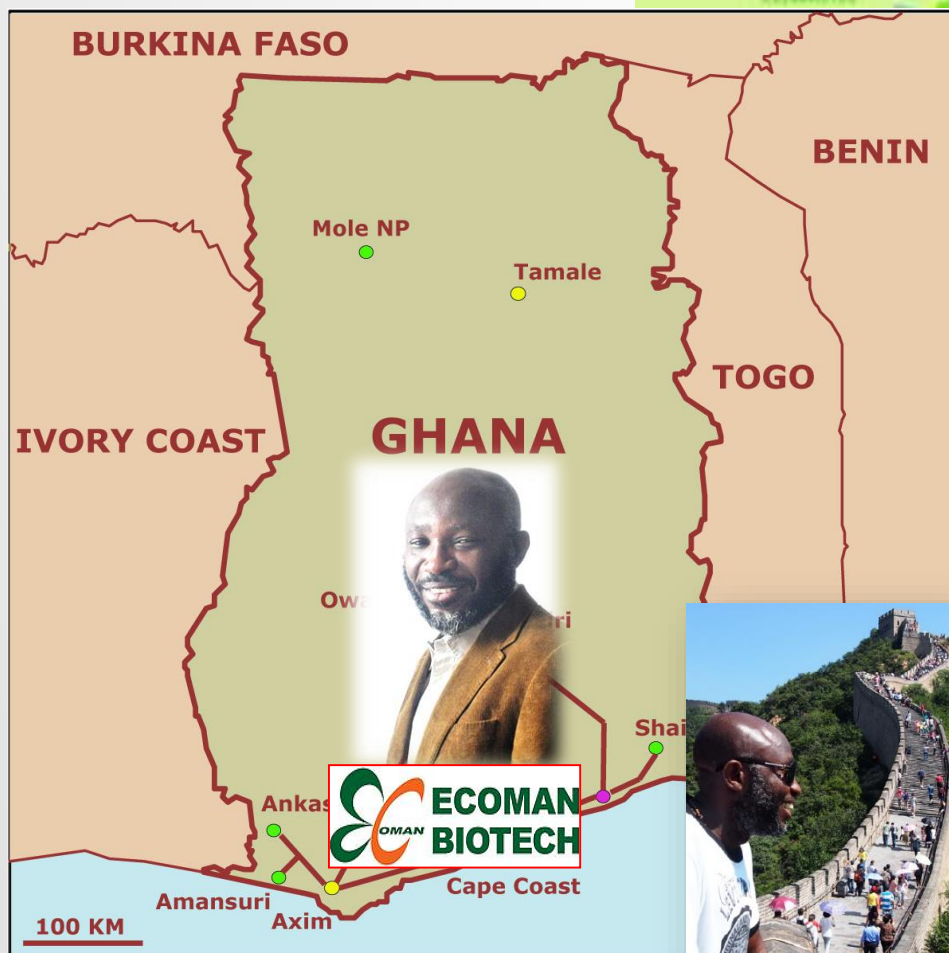
AWCP METHODOLOGY

- Following the steps

- In depth analysis of the trial area
- Training & Organizing
- Technical Support
- Monitoring
- Mass Baiting using GFFB
- Efficacy evaluation
- Meeting with Stakeholders to showcase results

What we've achieved

Global cases: **Ghana**



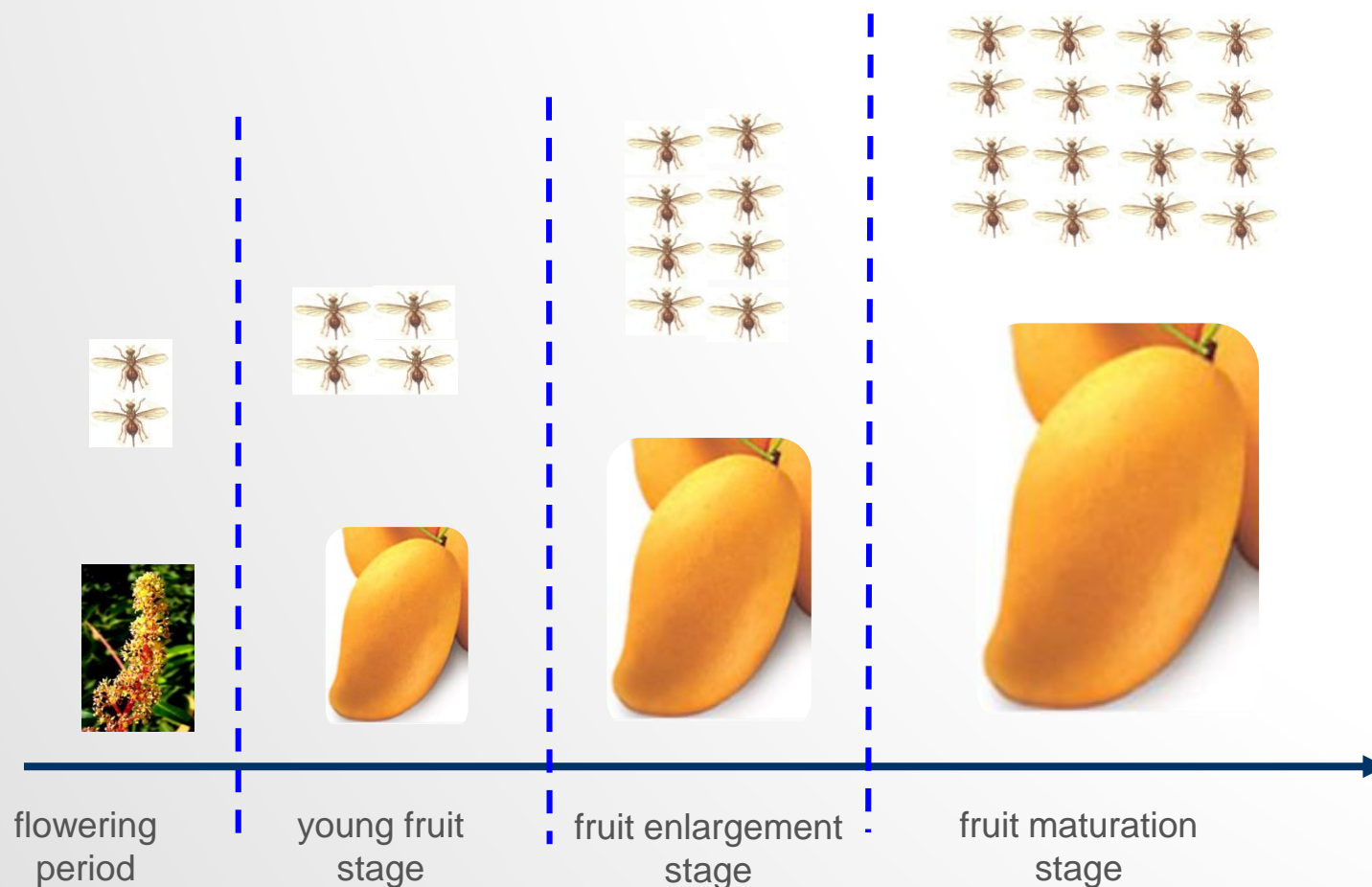
1. Preliminary Evaluation

Importance of timing

Methods → **When?**

Fruit maturation period

Example 1:



Start monitoring scheme at early stage, before fruit ripens and FF will be more and more with out control

The best prevention period should start at flowering stage (or 25-30 days before FF can lay eggs).

It means that the FF population must go down in this stage.

1.2 Preliminary Evaluation

Importance of timing

Methods → When?

Fruit maturation period

Example 2:

5-8 times' point spray –
Lowering the FF pop'



flowering
period

Using GFFB once every 5-7 days to maintain control efficacy of
the FF population at lower level.



young fruit
stage



fruit enlargement
stage



fruit maturation
stage

Applying AWCP using GREAT® Fruit Fly Bait



Oriental Fruit Fly
Pheromone Lure



Fruit Fly
traps



GFFB



Meeting with local authorities & grower associations

- understanding their needs



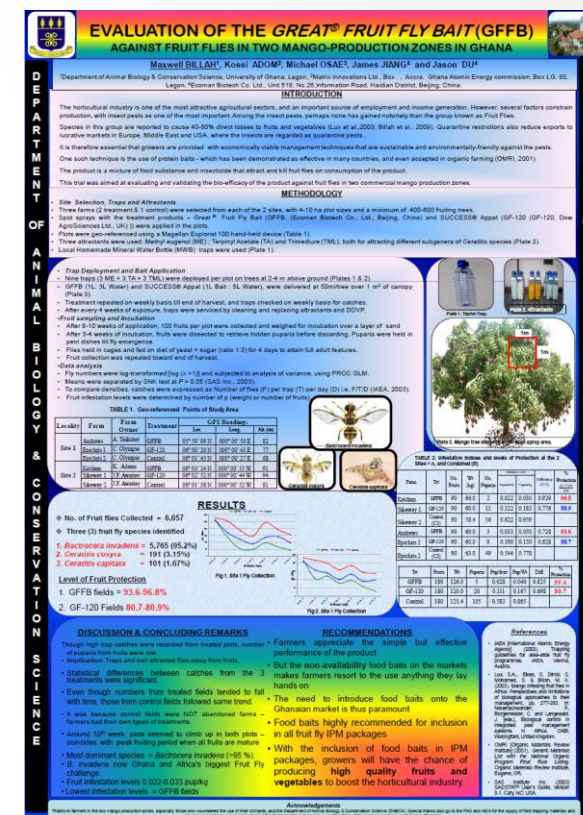
Monitoring



Training



Training
sessions in
class & field
demonstrations



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EVALUATION OF THE *GREAT[®] FRUIT FLY BAIT (GFFB)* AGAINST FRUIT FLIES IN TWO MANGO-PRODUCTION ZONES IN GHANA

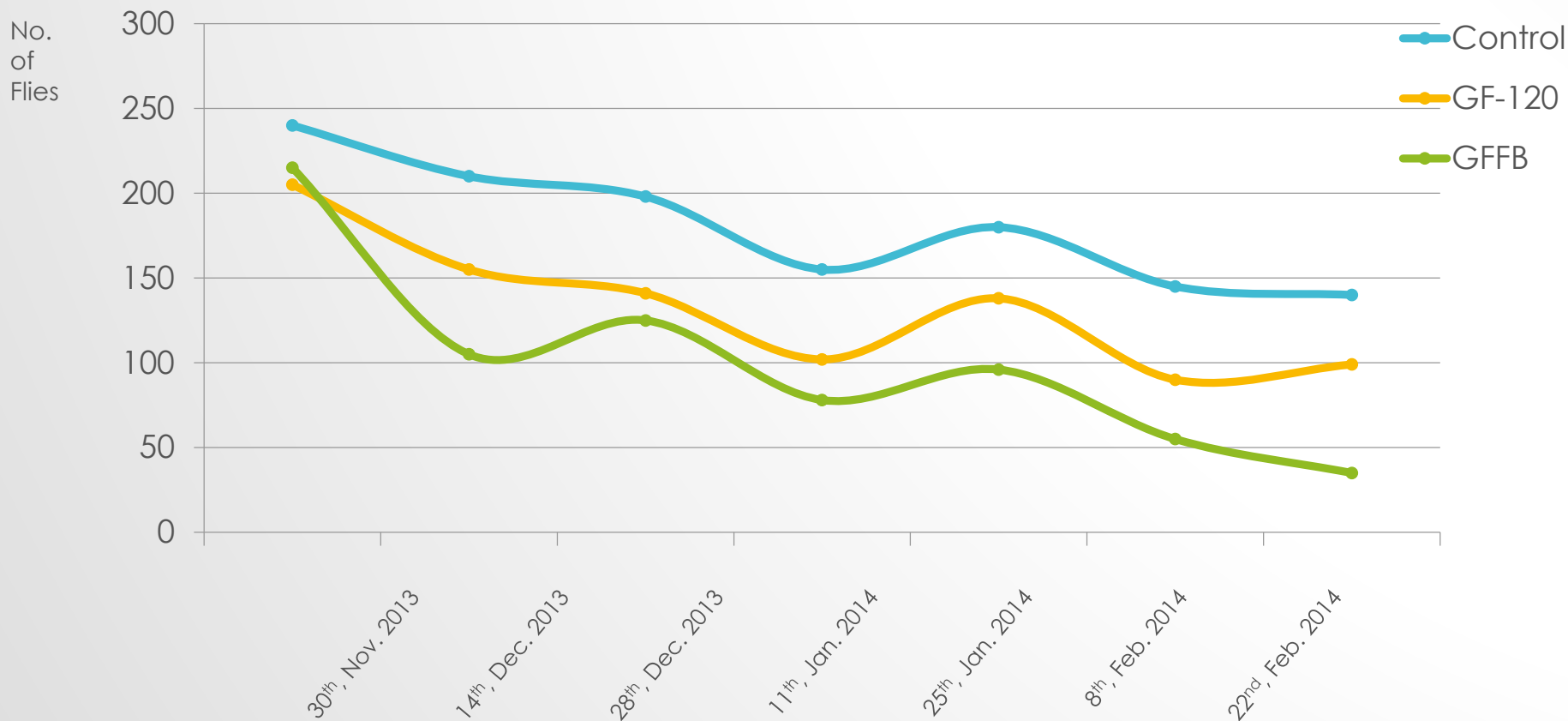


* Dr. Maxwell Billah, Department of Animal Biology & Conservation Science, University of Ghana, Legon.

- **Trial aim:** Evaluating and validating the bio-efficacy of the GFFB and other product against fruit flies in two commercial mango production zones.
- **Duration:** Nov. 30th, 2013 – Feb. 22nd, 2014; (2.5 months)



Fig 1. Site 1 fly collection





EVALUATION OF THE *GREAT[®] FRUIT FLY BAIT (GFFB)* AGAINST FRUIT FLIES IN TWO MANGO-PRODUCTION ZONES IN GHANA

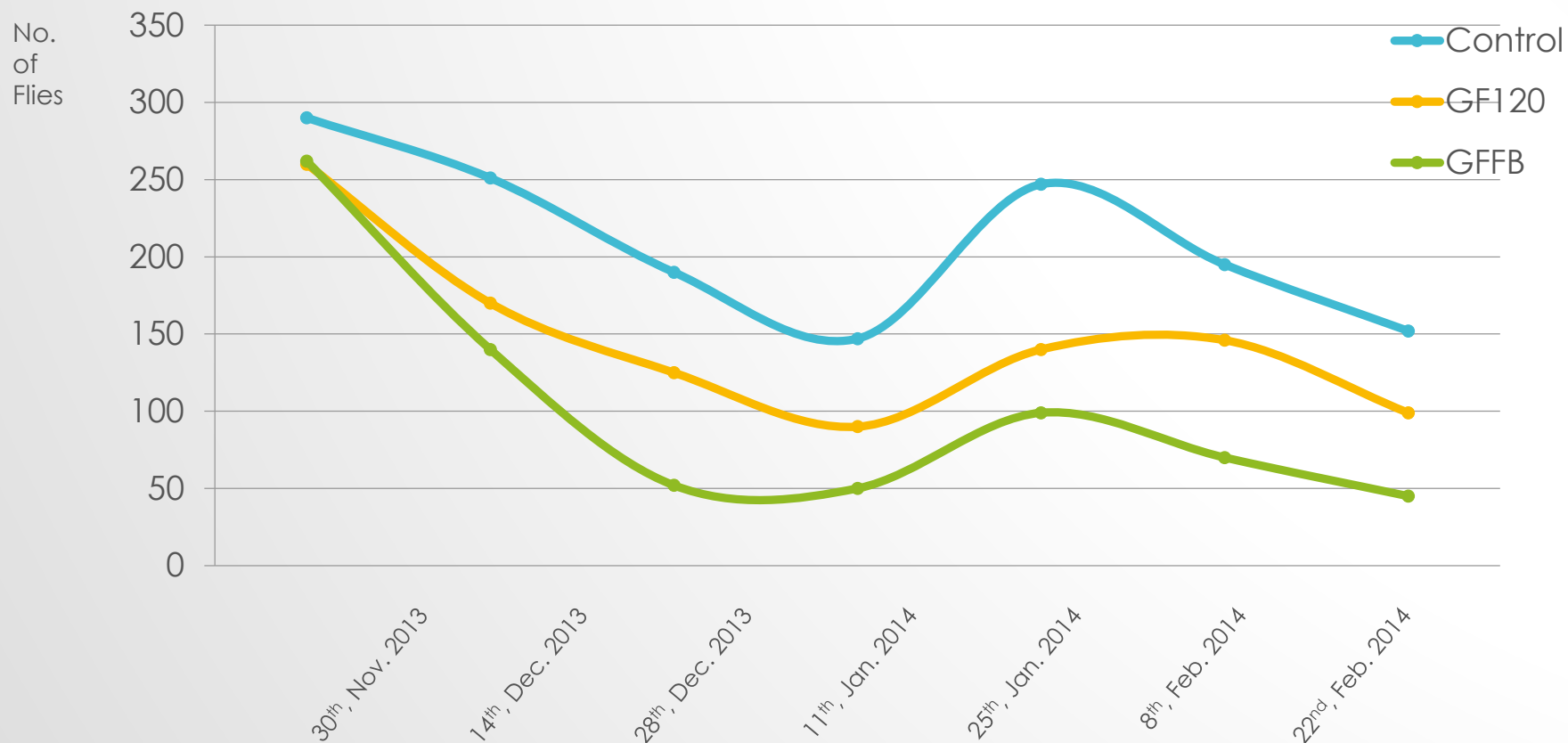


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Fig 1. Site 2 fly collection





EVALUATION OF THE *GREAT[®] FRUIT FLY BAIT (GFFB)* AGAINST FRUIT FLIES IN TWO MANGO-PRODUCTION ZONES IN GHANA



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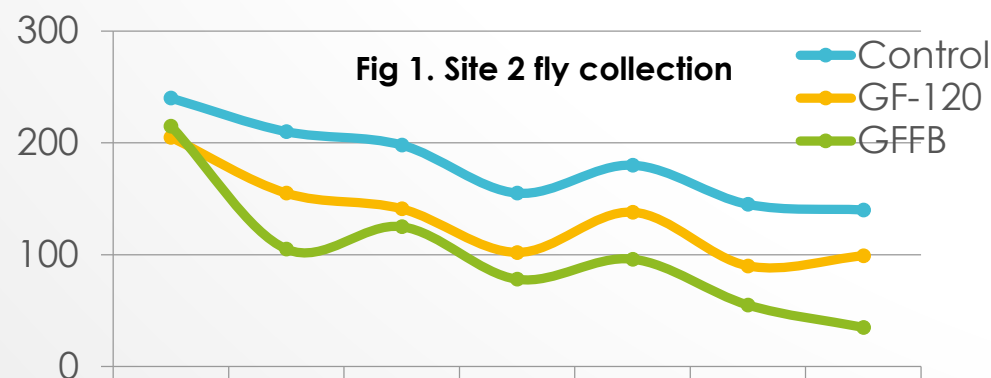
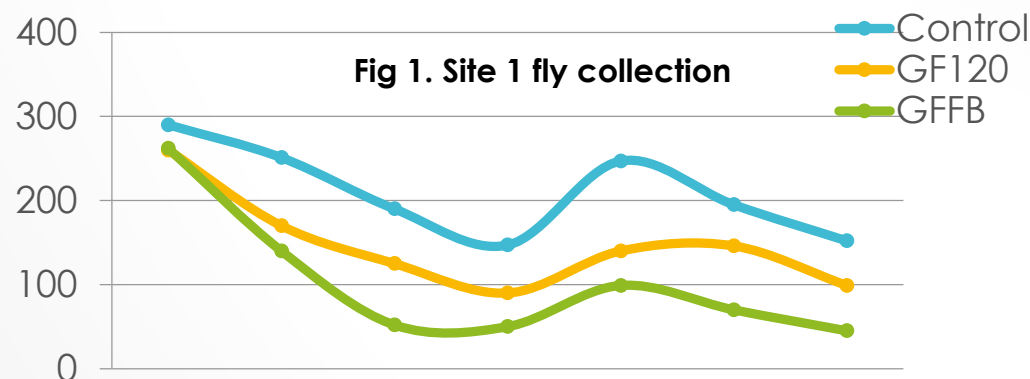
Results

- **No. of Fruit flies Collected = 6,057**
- Three (3) fruit fly species identified:
 - 1. *Bactrocera dorsalis* = 5,765 (95.2%)
 - 2. *Ceratitis cosyra* = 191 (3.15%)
 - 3. *Ceratitis capitata* = 101 (1.67%)

• Fruit Protection Level:

• 1. **GFFB fields = 93.6-96.8%**

• 2. Other product = 80.7-80.9%



SUMMARY

- The Ghana trial case has managed to increase the local crop Harvest efficiency and value;
- Minimize average fruit damage rate near 0%;
- Continued wide-scale operation and use of our system in other areas in West Africa, such as Cote D'ivoire and Burkina Faso;
- No other product currently provides what we do for the farmers.



What we've achieved -

Global cases: **THAILAND**

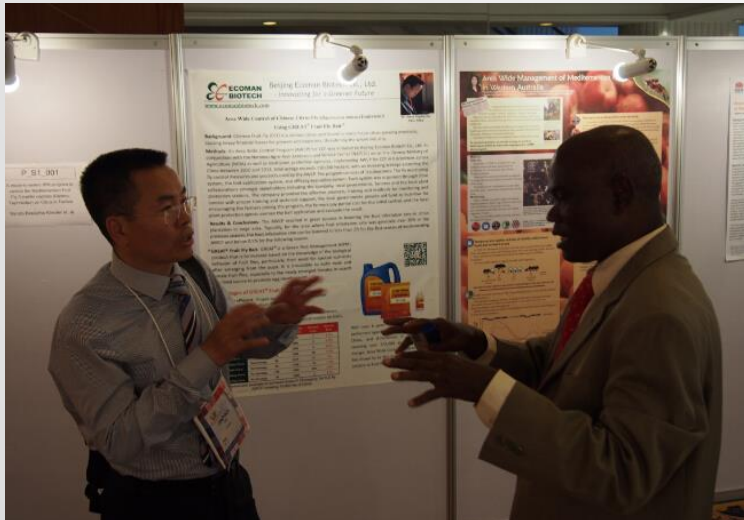




9TH INTERNATIONAL SYMPOSIUM FOR FRUIT FLY OF ECONOMIC IMPORTANCE. MAY, 2014. BANGKOK, THAILAND



Created vital connections from people all around the world





Productive activities facilitated new opportunities for partnerships & collaboration



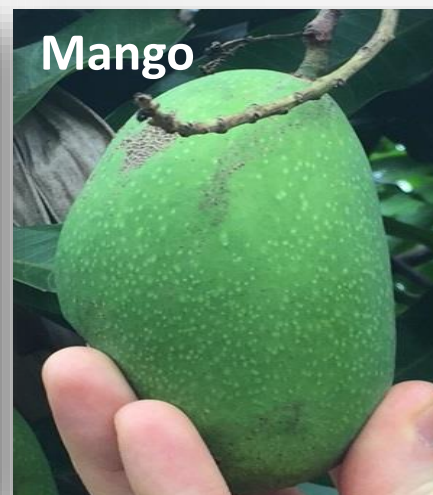
AWCP APPROACH

- In depth analysis of the trial area
- Training & Organizing
- Technical Support
- Monitoring
- Mass Baiting using GFFB
- Efficacy evaluation
- Meeting with Stakeholders to showcase results



total trial area of approx. 136 acres

Various fruits in Samutsakhorn area, Thailand,

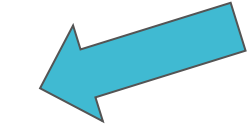
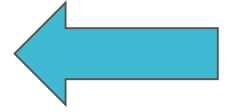
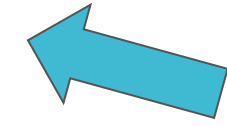


Major Fruit Fly species at Samutsakhorn



**Oriental Fruit Fly,
Bactrocera dorsalis (Hendel)**

Fruit Fly Problem at Samutsakhorn, Thailand



**Oriental Fruit Fly,
Bactrocera dorsalis, (Hendel)**

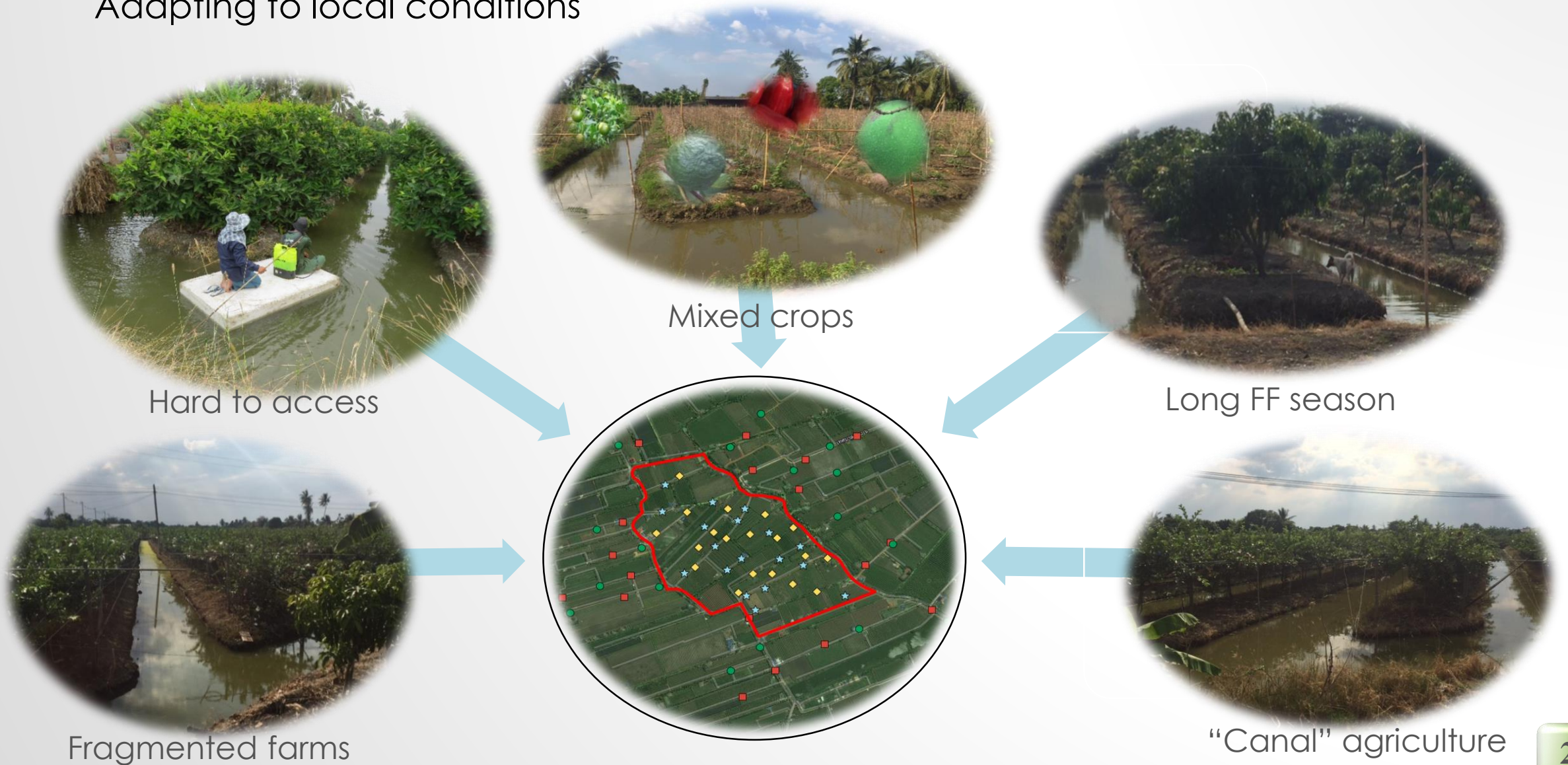
Fruit Fly Problem at Samutsakhorn, Thailand



Oriental Fruit Fly,
Bactrocera dorsalis, (Hendel)

Case analysis

Adapting to local conditions



MONITORING

- Monitoring is one of the most important parts in an AWCP;
- Help to determine the FF dynamics and spray intervals;



Dr. Du examines a FF trap



Mrs. Watchreeporn and local staff examining the FF



Monitoring layout of trap placement

TRAINING

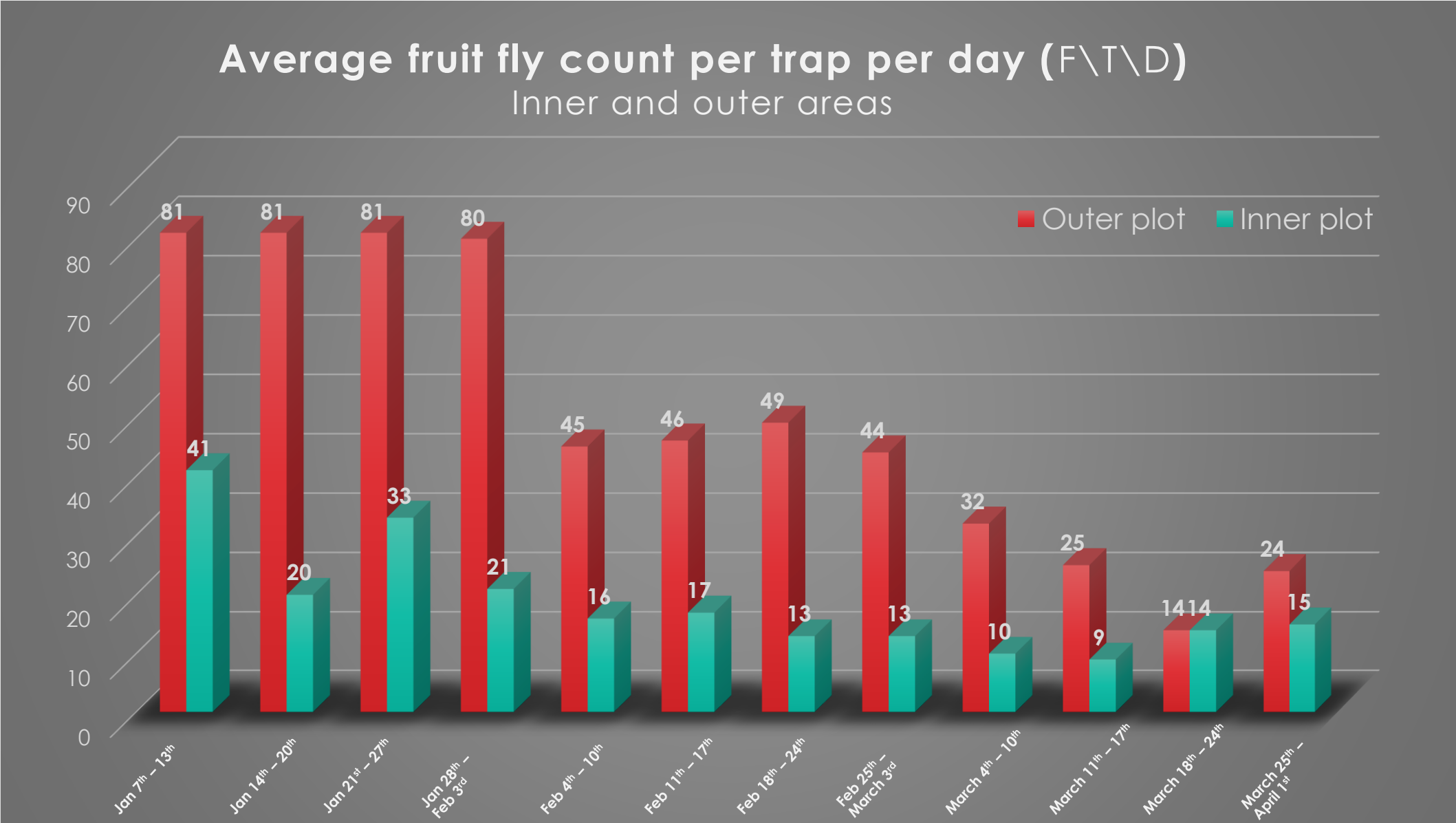
EFFICIENT LOCAL COLLABORATION



AWCP IMPLEMENTATION



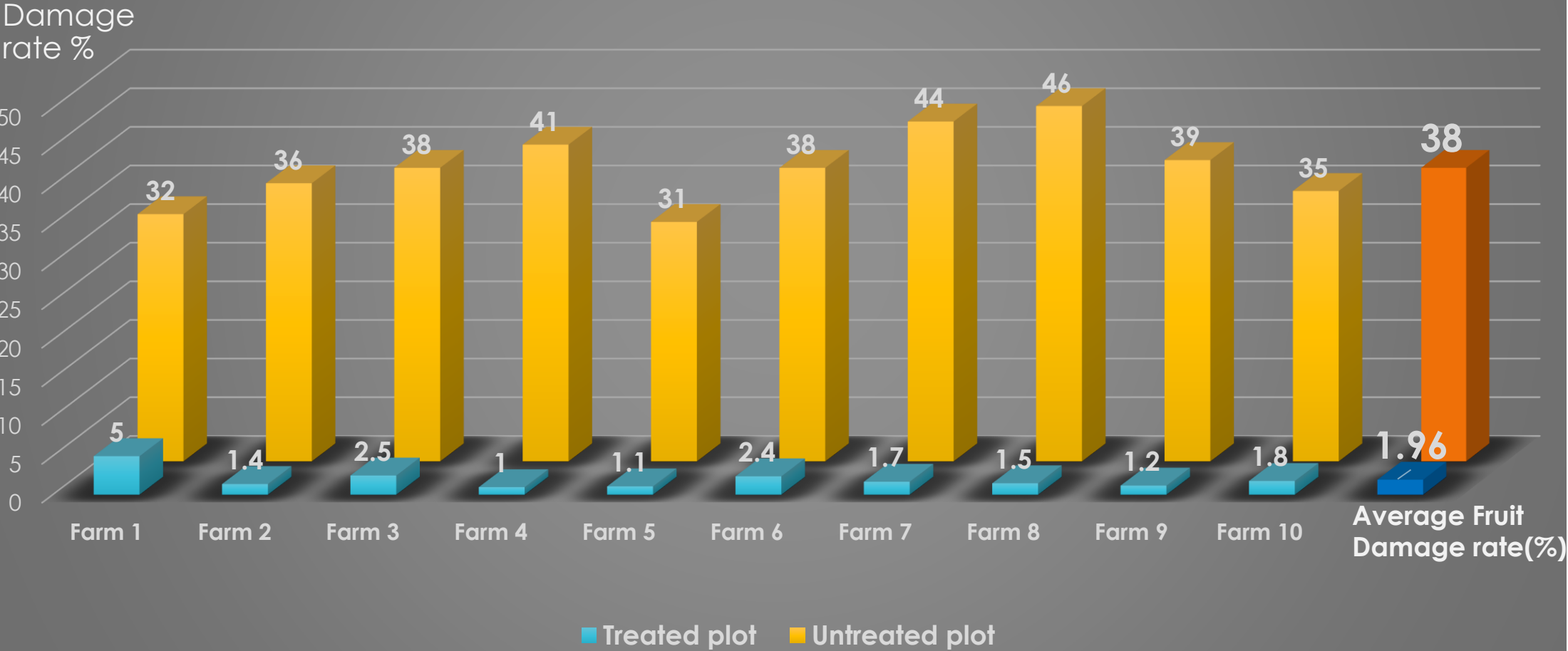
RESULTS 1



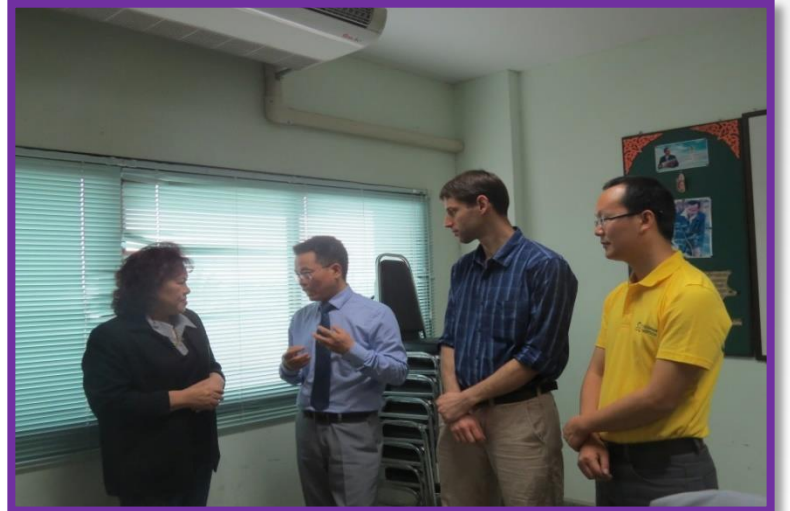
RESULTS 2

Average Fruit damage rate in the trial area - April 2015

We measured a total of 20 farms and analyzed the average Fruit damage rate



SUMMARY



SUMMARY



THANK YOU!



Innovating for a Greener Future