

# **Plan for Improving Seed Potato in Georgia**

**September 27th, 2018**

# Objectives



Potato wart  
(cancer)



Potato cyst  
nematode



Potato  
bacterial wilt



Potato bacterial  
ring rot

Provide direction to appropriate Georgian authorities for addressing constraints related to the quality seed production in Georgia, especially seed degeneration, in the next five years

# Approach: Integrated Seed Health



1. Resistant varieties

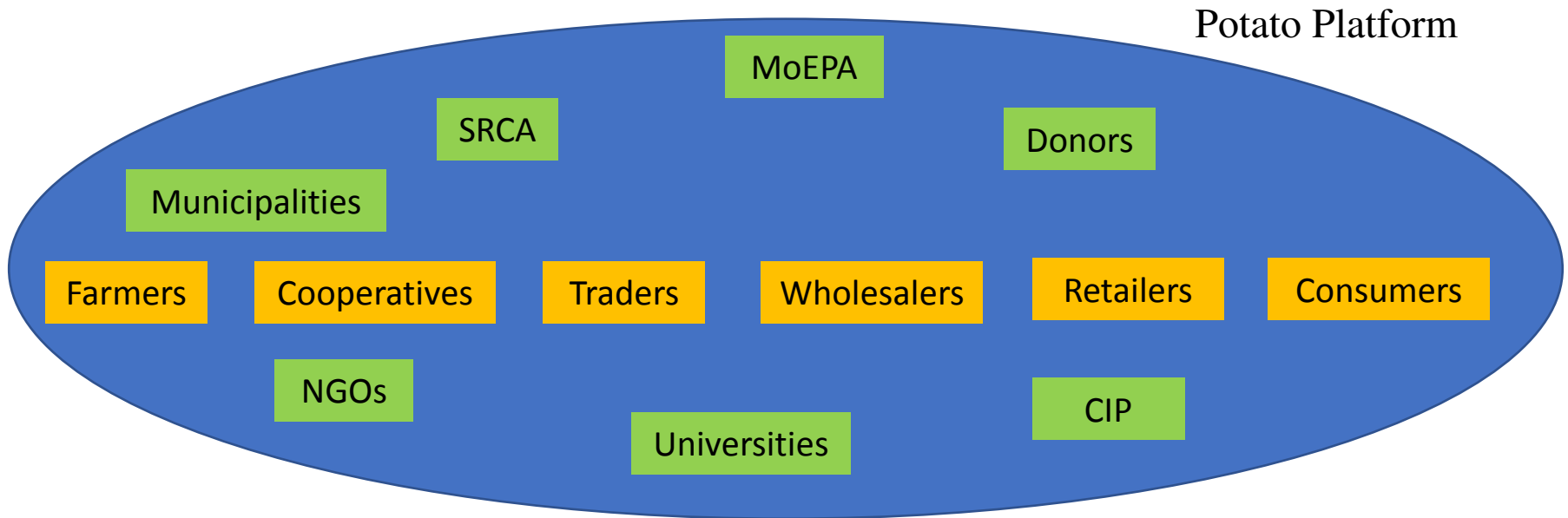
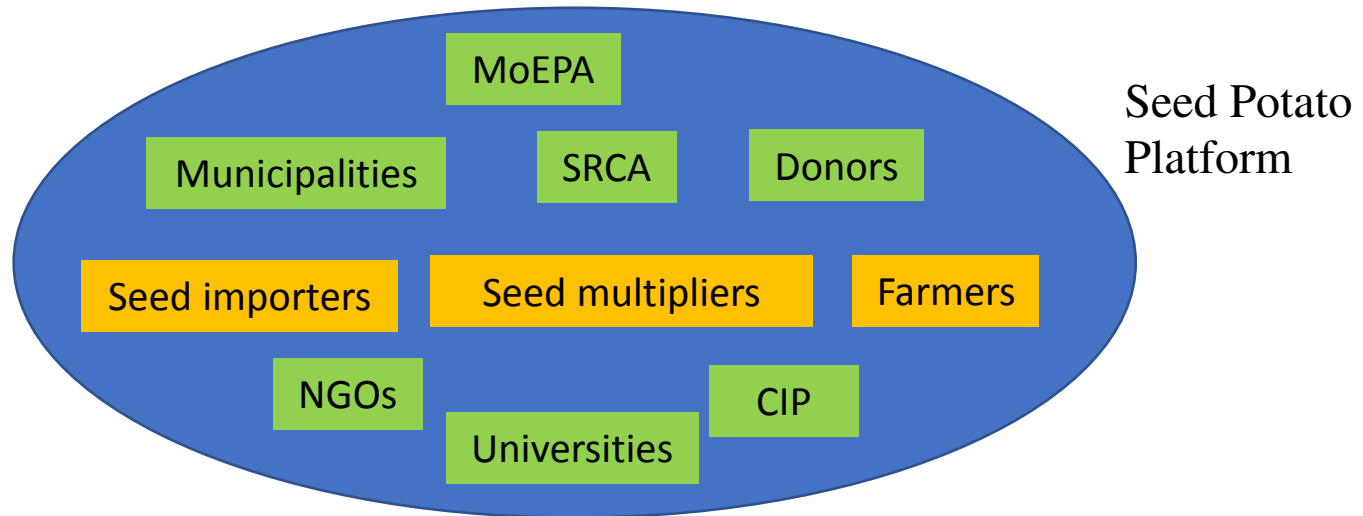
2. On-farm management

3. Certified seed

# Governance

**Led by:** Ministry of Environmental Protection and Agriculture (MoEPA)

**Implemented by:** Scientific-Research Center of Agriculture (SRCA)



# Governance

## Example from Peru



# **Component 1: Adoption of varieties that degenerate slowly due to their natural resistance to the organisms that cause potato seed degeneration**

(As part of a variety development program)

**Activity 1.1. Import new genotypes from CIP and other sources.**

**Activity 1.2. Identify and catalogue virus resistance in candidate varieties.**

**Activity 1.3. Participatory varietal trials.**

**Activity 1.4. Release and dissemination of new varieties.**

**Activity 1.5. Adoption studies of new varieties.**



File Edit View History Bookmarks Tools Help

Catalogue of CIP Advanced Clones

https://research.cip.cgiar.org/redlatinpapa/pages/home.php

Most Visited Getting Started Most Visited Getting Started Zotero Agresso Corp Pers Google World Clock CGSpace Dataverse Cluster CC2.1 Potato Late Blight Georgia ADA startup ...

# Catalogue of CIP Advanced Clones

Home Search for clones Breeders Choice Web Latinpapa Choose clone

You are in [Home](#)

## Presentation

This catalogue is intended to provide relevant information about advanced potato clones developed at the International Potato Center (CIP). These clones are currently available for worldwide distribution to potato research programs and other interested parties, including national programs, universities, producer associations and farmer communities. The advanced clones listed in this catalogue combine several traits, such as resistance to late blight, viruses, high productivity, among others. They were selected from CIP's breeding program and can be used to generate new varieties through further selection and validation with farmers and other chain actors according to the specific context and needs within each recipient country.

## How to use this catalogue

This catalog is designed so that users can access information in two ways:

Potato Varieties

Advanced Clones

Choose clone

**NEW!**  
Now with 439 Clones and 70 Varieties  
Catalogue Potato Varieties and Advanced Clones 2014

**CENTRO INTERNACIONAL DE LA PAPA**  
CIP

**RED LATINPAPA**  
Red Latinpapa es el instrumento de cooperación y intercambio de la papa

116 Pageviews

Windows taskbar: File Explorer, Microsoft Word, PowerPoint, Outlook, etc.

System tray: Network, Volume, Date/Time (12:12 PM 9/23/2018), Language (ENG)

<https://research.cip.cgiar.org/redlatinpapa/pages/home.php>





## Virus resistance trial (Tsilkani)

- 28 new potato varieties
- 4 commercial varieties



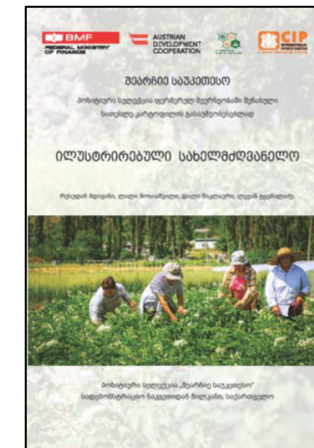
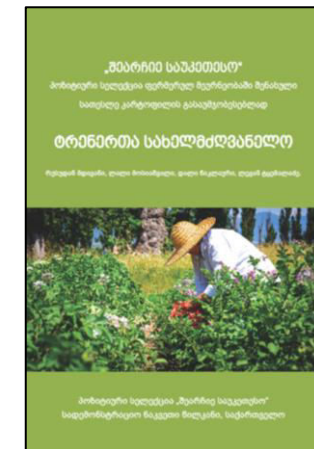
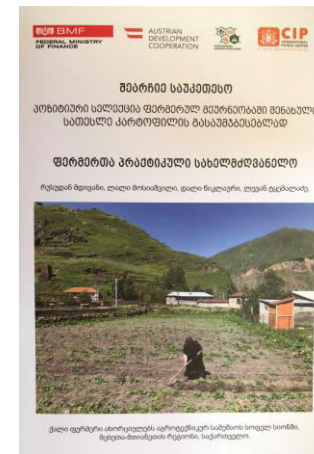
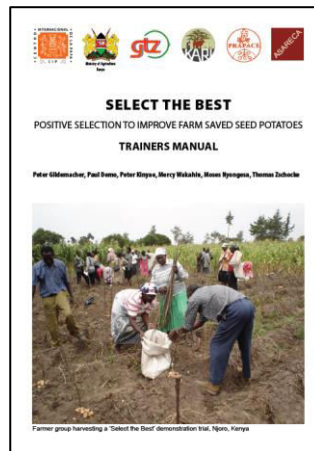
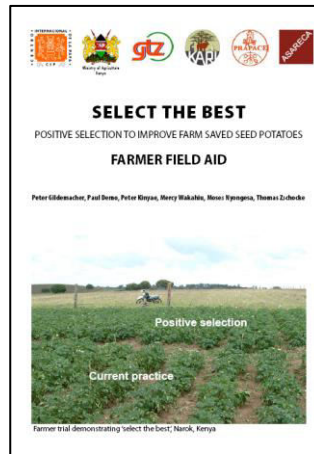


# **Component 2: On-farm practices to maintain or even improve seed quality**

**Activity 2.1. Adaptation of techniques and training materials**

**Activity 2.2. Training of extension agents and farmers**

**Activity 2.3. Monitoring seed health**



## Picture book

## Training on positive selection (Kazbegi, July 2018)





# Component 3: Strategic use of certified seed

## Participatory Market Chain Approach (PMCA)

A systematic process that:

- Builds trust among market chain actors and with R&D organizations
- Stimulates market driven innovation of different types

### Phases

#### Phase 1

##### Diagnosis: Market chain

Understand market chain actors, activities, interests, ideas, problems

Public Event 1

#### Phase 2

Participatory analysis new market opportunities: Work in thematic groups

Public Event 2

#### Phase 3

Develop market driven innovations:

- new products
- new technologies
- new institutions

Final Public Event

1 year approx.

### Participants

Interest

Trust

Collaboration

### R&D Orgs.

Leadership

Facilitation

Backstopping



From resources...



To creative  
ideas ...



To commercial  
products



## Colored potato chips around the world from the Andes!



## Technological innovation



## Commercial innovation



## Institutional innovation



### MANUAL DE CONTROL INTERNO DE CALIDAD (CIC) EN TUBÉRCULO - SEMILLA DE PAPA

Fabión Montesdeoca M.\*  
Gabriela Narváez P.\*  
Eloy Mora C.\*  
Jacqueline Benítez B.\*

\* Técnicos de la Estación Experimental Santa Catalina del INIA\*

Market-  
driven  
process



Market  
opportunity

- Exporting seed to Turkey (var. A)
- Producing seed for farmers associated with a company that produces chips (var. B)



Commercial  
innovation

New brand of certified seed for varieties A and B



Technological  
innovations

- Optimized techniques to increase the production of *in vitro* plants or minitubers
- Optimized diagnostic methods



Institutional  
innovations

- Improved regulations for seed production
- Group of seed multipliers



Supply-  
driven  
process





Country	Certified seed use (%)	Informal seed system (%)	Reference
Afghanistan	0	100	Kadian et al., 2007
Bangladesh	5	95	Ilangantileke et al., 2001
Bhutan	2	98	Kadian et al., 2007
Bolivia	2	98	Hidalgo et al., 2011
China	20	80	Muthoni et al., 2013
Colombia	2-10	90-98	FPAPA, 2010; Guzmán-Barney et al., 2012
Ecuador	1-3	97-99	Thiele, 1999; ESPAC, 2012
Ethiopia	1	99	Gildemacher et al., 2009
India	20	80	Kadian et al., 2007
Indonesia	6	94	Muthoni et al., 2013
Kenya	2	98	Gildemacher et al., 2009
Pakistan	5	95	Muthoni et al., 2013
Peru	0.5	99.5	Hidalgo et al., 2011
Uganda	0.1	99.9	Gildemacher et al., 2009

Thomas-Sharma et al., 2015

# Funding

The design of this Plan is supported by the project:

*Enhancing Rural Livelihoods in Georgia: Introducing Integrated Seed Health Approaches to Local Potato Seed Systems*, funded by the Austrian Development Agency (ADA).

Several activities described above are being funded and implemented by this project.

The MoEPA and other partners are expected to fund significant portions of this Plan.



# Research Program on Roots, Tubers and Bananas



# Our Crops



**Banana  
Plantain**



**Cassava**



**Potato**



**Sweetpotato**



**Yam**



**Other R&T**



# CIP's previous experiences

## India



## Peru



**Bolivia, Ecuador, Kenya, Rwanda, Ethiopia, etc.**

# Your task

1. Break into 4 groups: Component 1 to 3, Seed potato platform
2. *Discuss the components and proposed activities*
3. Fill in the Excel document: For each activity, define actions, methodology, partner in charge, contributors, delivery date and budget

AutoSave (Off) | Action Plan - Excel | Andrade, Jorge (CIP) | Share

File Home Insert Page Layout Formulas Data Review View Help Acrobat Tell me what you want to do

Clipboard: Cut, Copy, Paste, Format Painter | Font: Calibri, 11, Bold, Italic, Underline, Color, Background Color | Alignment: Wrap Text, Merge & Center | Number: General, Currency, Percentage, Decimals, Fractions | Styles: Normal, Bad, Good, Neutral, Calculation, Check Cell | Cells: Insert, Delete, Format | Editing: AutoSum, Fill, Clear, Sort & Find & Filter, Select

B12 | Action 1.3.1.

	A	B	C	D	E	F	G	H	I	J
1	Plan for Improving Seed Potato in Georgia - Action Plan									
2										
3	Component 1: Adoption of varieties that degenerate slowly due to their natural resistance to the organisms that cause PSD									
4										
5	Activity	Action	Methodology	Partner in charge	Contributors	Delivery date	Budget			
6	1.1. Import new genotypes from CIP and other sources	Action 1.1.1.								
Action 1.1.2.										
Action 1.1.3.										
8	1.2. Identify and catalogue virus resistance in candidate varieties	Action 1.2.1.								
Action 1.2.2.										
Action 1.2.3.										
11	1.3. Participatory varietal trials	Action 1.3.1.								
Action 1.3.2.										
Action 1.3.3.										
14	1.4. Release and dissemination of new varieties	Action 1.4.1.								
15		Action 1.4.2.								

Component 1 | Component 2 | Component 3 | Seed Potato Platform

Ready | 12:32 PM 9/23/2018