



Food and Agriculture  
Organization of the  
United Nations



**The International Treaty**  
ON PLANT GENETIC RESOURCES  
FOR FOOD AND AGRICULTURE

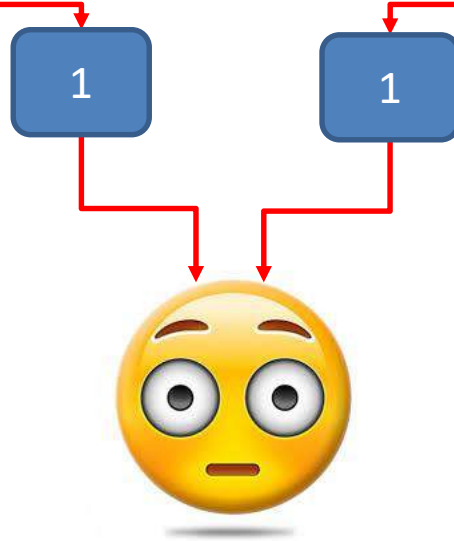
# GLIS and DOIs Registering PGRFA

Addis Ababa, Ethiopia, 30 October – 1 November 2018

# Problem #1

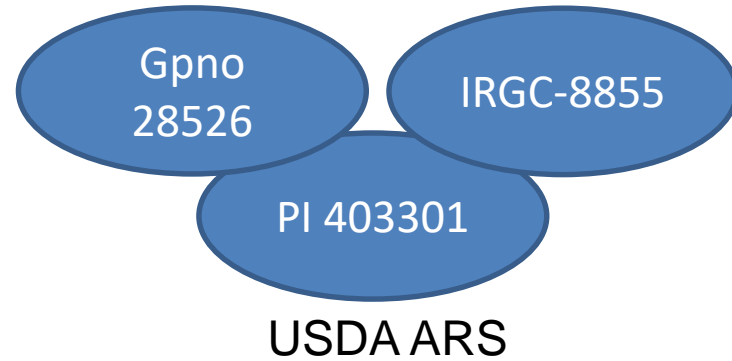
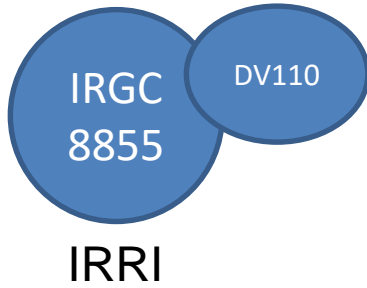
Genebank A	
Genus	AN
Oryza	1
Oryza	2
Oryza	3
Hordeum	1
Hordeum	2
Triticum	1
Triticum	2

Genebank B	
Genus	AN
Triticum	1
Hordeum	2
Oryza	3

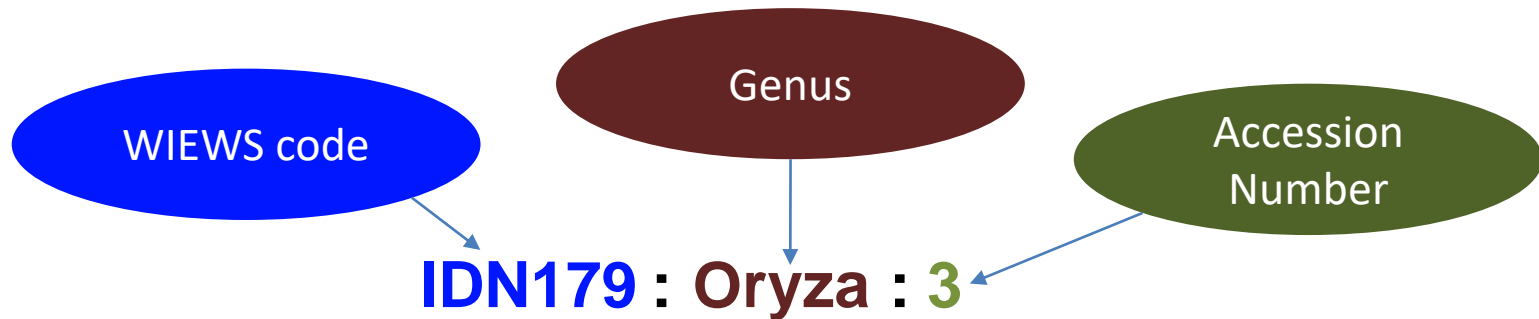


**Accession Numbers are OK locally. Not so OK globally**

# Example: IRGC 8855



# Proposed solution to problem #1



## Pros

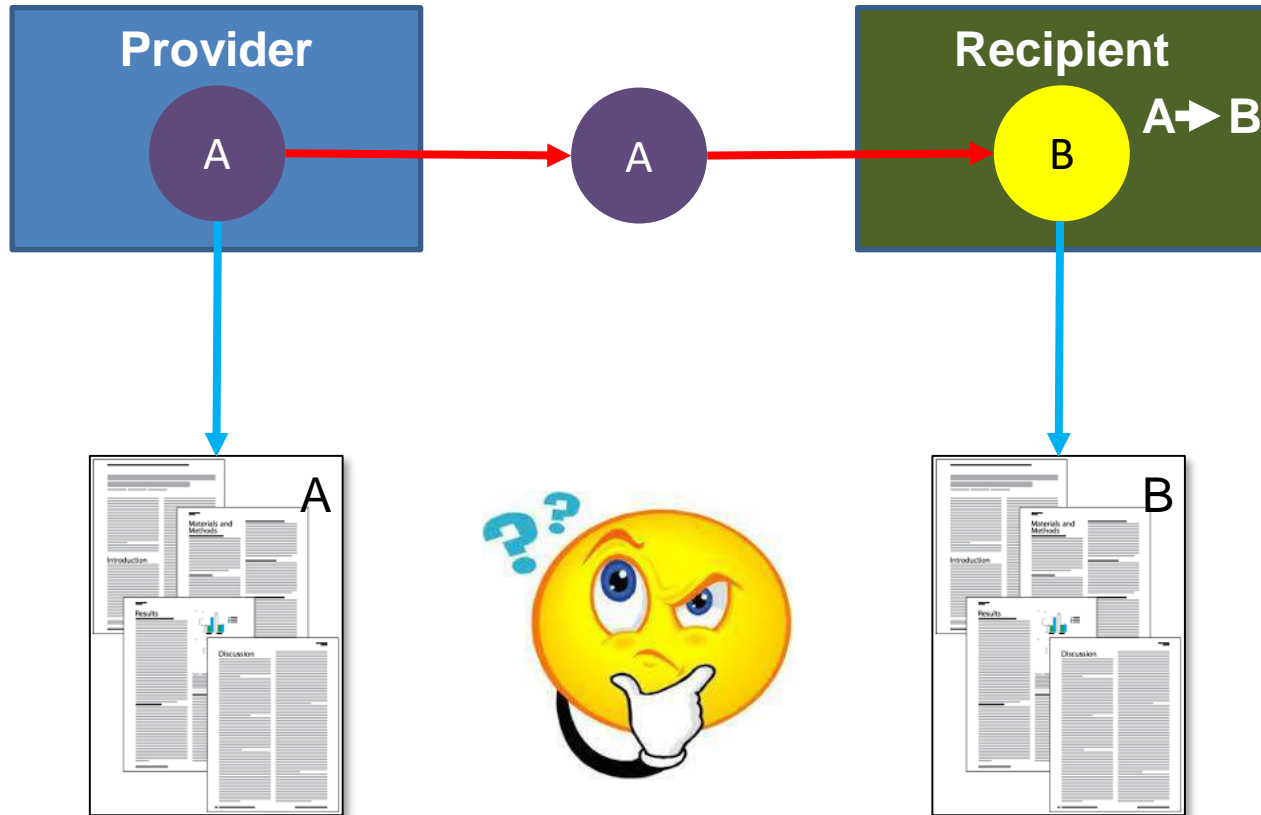
- Easy to obtain

## Cons

- Based on information that is not permanent
  - WIEWS code contains country code that may change (URSS, Jugoslavia)
  - Genus may change too!
- It is not **opaque!**

**We need a more effective solution!**

## Problem #2



Connection of Recipient's AN to Provider's AN is **at best** recorded in the Recipient's documentation system

# The request

**The community agreed on the need of accurately and permanently identifying PGRFAs**

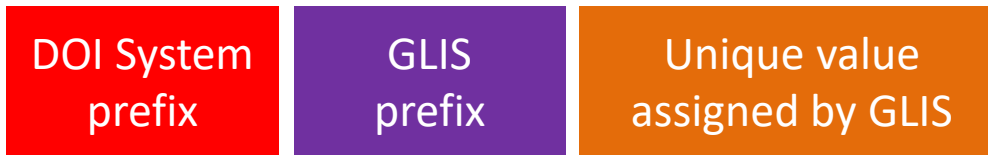
- The Secretariat conducted:
  - a study on available technologies
  - a survey among over 200 experts worldwide
  - a validation study involving 23 selected experts
- The outcome of the process was the adoption of Digital Object Identifiers (**DOIs**) by the Scientific Advisory Committee (SAC) on the Global Information System

## DOI's main facts

- International DOI Foundation created in 1996 by the three major international publishing trade associations
- ISO 26324 standard
- About 180 Million DOIs registered so far, with an annual growth rate of 16%
- IDF maintains the Global DOI System (network of redundant servers worldwide)

# What does a DOI look like?

**10.18730/M9SNT**



- Fully opaque
- Very compact
- Guaranteed unique
- Never changes



# Assigning DOIs to PGRFA

- **What is the DOI associated to?**

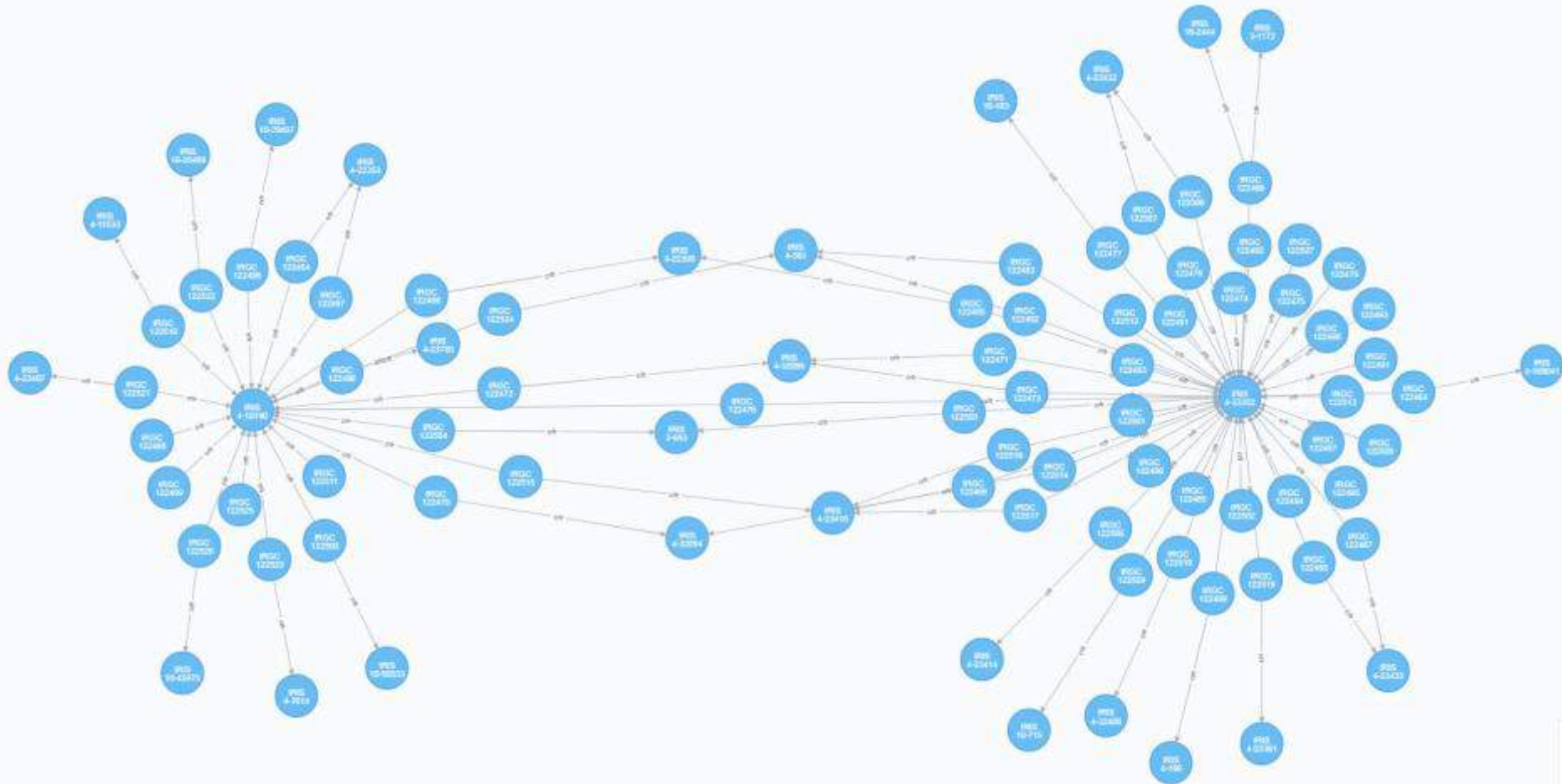
- Physical material, not its description

- In case of changes to taxonomy or error corrections, the DOI does not change

- Holder of the material

- When material is transferred, a new DOI is usually recommended because the material is potentially placed under different legal and QA conditions
    - Also, when the Recipient publishes results, they must refer to the Recipient's DOI, not the Provider's

# Relationships among PGRFAs in GLIS, a glimpse





# GLIS documentation published online

- **Descriptors** associated to the DOI
  - Based on Multi Crop Passport Descriptors with some extensions
  - **Mandatory:** Holder, species, method, date, local identifier
  - **Recommended:** Biological status, MLS status, links to websites etc.
  - **Additional:** Information on collecting, breeding, etc.
- **Guidelines** with concrete use cases to help integrate DOIs in existing genebank workflows
  - Working on more areas (e.g. in-situ and breeding)
- Formats and protocols for registration, update and transfer notification
- Documentation available at <http://www.fao.org/plant-treaty/areas-of-work/global-information-system>

# GLIS Registration Service: DOIs online



Food and Agriculture  
Organization of the  
United Nations



**The International Treaty**  
ON PLANT GENETIC RESOURCES  
FOR FOOD AND AGRICULTURE

Home

Login

## 665,398 DOIs assigned so far

Welcome to the DOI Registration Service of the Global Information System of the [International Treaty on Plant Genetic Resources for Food and Agriculture](#).

This service assigns Digital Object Identifiers ([DOIs](#)) to Plant Genetic Resources for Food and Agriculture (PGRFA) for reference in third party systems and scientific literature.

Access to the system is free and open to anyone.

If you wish to obtain DOIs for your PGRFA, please send an email to [PGRFA-Treaty@fao.org](mailto:PGRFA-Treaty@fao.org) requesting a user account.

**By using this system you declare to have read and accepted the [Terms of use](#).**

Type the DOI of the PGRFA you  
want to find



Search

or go to the [advanced search form](#)

10 August 2018

# GLIS Registration Service: DOIs online



Food and Agriculture  
Organization of the  
United Nations



The International Treaty  
ON PLANT GENETIC RESOURCES  
FOR FOOD AND AGRICULTURE

Home Login

## PGRFA doi:10.18730/5FNBT



Citation: <https://doi.org/10.18730/5FNBT>

[Main descriptors](#) [DOI info](#)

<b>Location</b>	International Rice Research Institute DAPO BOX 7777 1301 Metro Manila Philippines WIEWS code: PHL001 [ <a href="#">Details</a> ] Easy-SMTA PID: 00AB40	<b>Biological status</b>	
<b>Local identifier</b>	IRGC 128058	<b>Names</b>	
<b>Date</b>	2012-05-01	<b>Other identifiers</b>	
<b>Creation method</b>	In-house variant from <a href="https://doi.org/10.18730/298Z3">10.18730/298Z3</a>	<b>MLS status</b>	Art. 15 collection
<b>Taxon</b>	Oryza sativa	<b>Historical</b>	No
<b>Common name</b>	Rice		

Links to associated information (1-5 of 5)

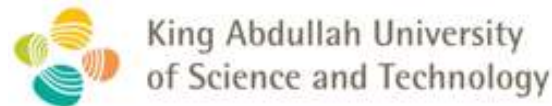
Keywords	URL
Genomics	<a href="https://doi.org/10.1186/2047-217X-3-8">https://doi.org/10.1186/2047-217X-3-8</a>
Genomics	 <a href="http://snp-seek.irri.org/_variety.zul?irisid=313-10844">http://snp-seek.irri.org/_variety.zul?irisid=313-10844</a>
Genomics	<a href="https://doi.org/10.5524/200001">https://doi.org/10.5524/200001</a>
Passport data	<a href="https://www.genesys-pgr.org/10.18730/5FNBT">https://www.genesys-pgr.org/10.18730/5FNBT</a>
Genomics	<a href="https://doi.org/10.1186/2047-217X-3-7">https://doi.org/10.1186/2047-217X-3-7</a>

# Partnerships

- FAO: CIO, WIEWS, AGP, OPC
- CGIAR Genebank and Plant Breeding Platforms
- Genesys
- ECPGR EURISCO
- USDA-ARS
- GODAN
- SDIS
- CBD
- CAPFITOGEN
- GRIN-Global
- IRRI B4R



# Pioneer DOI registrants





# How do I register my collection?

3 options available:

- Manually on the web site (small collections or editing)
- Using Excel tables (medium size collections)
- Using the XML protocol (all collections)
  - developing your own software
  - deploying the Toolkit

For Excel tables we provide:

- Excel template
- Documentation explaining how to fill-in the template

Available at:

<http://www.fao.org/plant-treaty/areas-of-work/global-information-system/techdoc>

Or send an email to **[PGRFA-Treaty@fao.org](mailto:PGRFA-Treaty@fao.org)**

# Using Excel tables

The template is comprised of 3 areas:

- mandatory fields
- recommended fields
- additional fields

Mandatory descriptors										
Organization or individual conserving the PGRFA								Scientific or common name		
M01	M01	M01	M01	M01	M02	M03	M04	M05	M05	M05
FAO WIEWS code	Easy-SMTA PID	Name	Address	Country	PGRFA unique identifier	Date	Method	Genus	Species	Common name
IND002	00AF93				ICC 20596	2012-08-01	acqu	Cicer	arietinum	Chickpea

Acquisition



# Using Excel tables

Highly recommended descriptors			
R01	R01	R02	R03
Links to associated information	Link keyword codes	DOI(s) of progenitor(s)	Biological status
<a href="http://genebank.icrisat.org/IND/PassportSummary?ID=ICC%2020596">http://genebank.icrisat.org/IND/PassportSummary?ID=ICC%2020596</a>	1,2,3		300
	<ul style="list-style-type: none"> <li>• Passport data</li> <li>• Characterization</li> <li>• Evaluation</li> </ul>		Traditional cultivar / Landrace

Highly recommended descriptors						
Additional taxonomic category						
R04	R04	R04	R05	R06	R07	R08
Species auth.	Subtaxa	Subtaxa auth	Names	Other identifiers	MLS Status	Historical PGRFA
L.				1	n	
				Included	Material is available	

# Using Excel tables

Additional descriptors											
Provider's location							Collector's location				
A01	A01	A01	A01	A01	A02	A03	A04	A04	A04	A04	A04
FAO WIEWS code	Easy-SMTA PID	Name	Address	Country	Provider's PGRFA unique ID	Country of provenance	FAO WIEWS code	Easy-SMTA PID	Name	Address	Country

Additional descriptors							
A05	A06	A07	A08	A09	A10	A11	A12
Collector's PGRFA unique ID	Collecting mission ID	Location where PGRFA was collected	Latitude	Longitude	Uncertainty	Geodetic datum	Georeferencing method

Additional descriptors								
A13	A14	A15	Breeder's location					A17
Elevation	Collecting date	Collecting source	FAO WIEWS code	Easy-SMTA PID	Name	Address	Country	Ancestry

40

→ Institute, Experimental station, Research organization, Genebank

# What it looks like after registration



Food and Agriculture  
Organization of the  
United Nations



The International Treaty  
ON PLANT GENETIC RESOURCES  
FOR FOOD AND AGRICULTURE

Home

Login

## PGRFA doi:10.18730/MYBX0

Citation: <https://doi.org/10.18730/MYBX0>



Main descriptors

Acquisition

Collection

DOI info

**Location** International Crop Research Institute for the Semi-Arid Tropics  
Patancheru  
502324 Hyderabad - Andhra Pradesh  
India  
WIEWS code: IND002 [Details]  
Easy-SMTA PID: 00AN74

**Local identifier** ICC 20596

**Date** 2012-08-01

**Creation method** Acquisition

**Taxon** *Cicer arietinum* L.

**Common name** Chickpea

**Biological status** Traditional cultivar/landrace

**Names**

**Other identifiers**

**MLS status** Included

**Historical**

### Links to associated information (1-3 of 3)

Keywords	URL
Passport data	<a href="http://germplasm.icrisat.org/gringlobal/accessiondetail.aspx?id=36042">http://germplasm.icrisat.org/gringlobal/accessiondetail.aspx?id=36042</a>
Passport data	<a href="https://www.genesys-pgr.org/10.18730/MYBX0">https://www.genesys-pgr.org/10.18730/MYBX0</a>
Evaluation, Characterization, Passport data	<a href="http://genebank.icrisat.org/IND/PassportSummary?ID=ICC%2020596">http://genebank.icrisat.org/IND/PassportSummary?ID=ICC%2020596</a>

## Excel registration procedure

- 1. Download documentation and template**
- 2. Study documentation**
- 3. Fill-in a few rows**
- 4. Email Excel table to us for preliminary checking**
- 5. Receive feedback**
- 6. Fill-in full table (maybe one for each collection?)**
- 7. Email it to us for registration**

# OK, I got DOIs, now what?

## **Use the DOIs you received from GLIS:**

- **in publications**
  - list the DOIs of the materials as bibliographic references
- **in datasets**
  - enter the DOIs of the materials in the metadata submitted for registration
- **in the SMTAs you issue**
  - list the DOIs in Annex 1 to the SMTA

# DOIs in publications and datasets

IBPGR (1976) *Report of IBPGR Working Group on Engineering, Design and Cost Aspects of Long-Term Seed Storage Facilities*. Rome: International Board for Plant Genetic Resources. [Google Scholar](#)

IBPGR (1985) *IBPGR Advisory Committee on Seed Storage: Report of the Third Meeting*. Rome: International Board for Plant Genetic Resources. [Google Scholar](#)

IRGC 117265 <https://doi.org/10.18730/1PG6J> CrossRef | [Google Scholar](#)

IRGC 117266 <https://doi.org/10.18730/4WZGR> CrossRef | [Google Scholar](#)

IRGC 117267 <https://doi.org/10.18730/4WZHS> CrossRef | [Google Scholar](#)

IRGC 117268 <https://doi.org/10.18730/4WZJT> CrossRef | [Google Scholar](#)

All modern dataset repositories allow you to specify the DOIs of the entities to which the dataset refers



# DOIs in the SMTA

## Anexo 1

### LISTA DEL MATERIAL PROPORCIONADO

Este *Anexo* contiene una lista del **Material** suministrado en virtud del **presente Acuerdo**, incluida la información conexas mencionada en el artículo 5 b).

Respecto a todo el **Material** consignado en la lista se incluye la siguiente información: todos los datos de pasaporte disponibles y, con arreglo a la legislación aplicable, cualquier otra información descriptiva conexas de carácter no confidencial de que se disponga.

**Cultivo:** Papa, patata **Sample ID:** doi:10.18730/2BRK

**Información conexas:**

**Cultivo:** Papa, patata **Sample ID:** doi:10.18730/91RP

**Información conexas:**

# Training and information resources

<http://www.fao.org/plant-treaty/areas-of-work/global-information-system>

## **Resources**

[Meetings of the Scientific Advisory Committee](#)

[Background information on DOIs](#)

[Guidelines and descriptors](#)

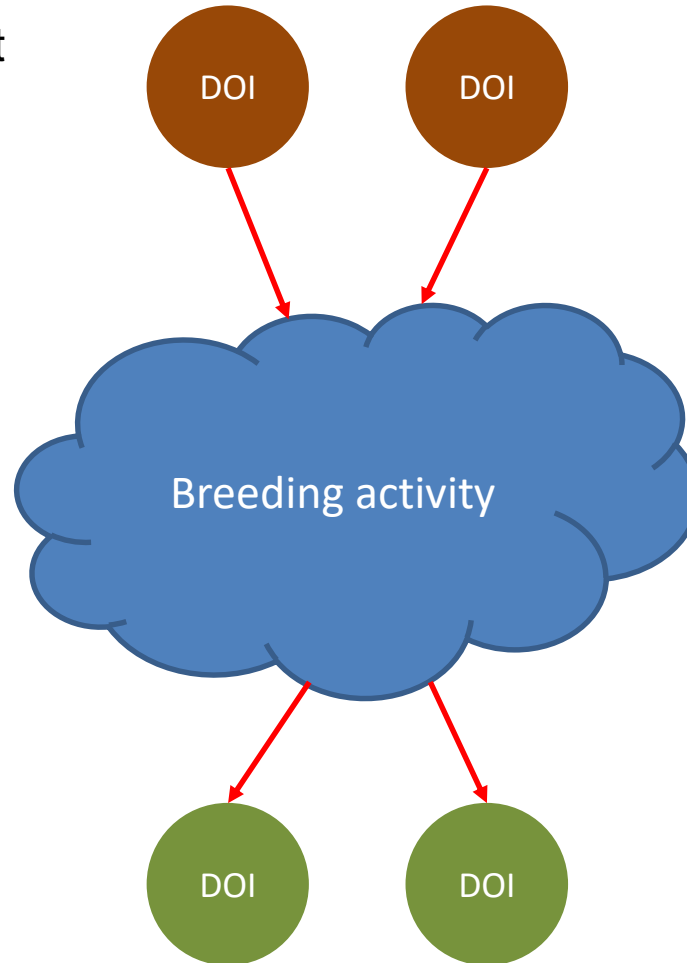
[Frequently Asked Questions](#)

[Selected documentation and links](#)

[Outreach events](#)

# I am a breeder, what should I do with DOIs?

Make sure that parent materials have associated DOIs



Assign DOIs to released varieties

**Thank you!**

**Q & A**

[PGRFA-Treaty@fao.org](mailto:PGRFA-Treaty@fao.org)