

The International Treaty



### INTERNATIONAL TREATY ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

### FIRST MEETING OF THE EXPERT CONSULTATION ON THE GLOBAL INFORMATION SYSTEM ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

### San Diego, USA, 7-8 January 2015

EASY-SMTA and the Generation of Data on the Global Flow of Plant Genetic Resources for Food and Agriculture

#### **EXECUTIVE SUMMARY**

1. The document provides an overview of Easy-SMTA, the PID Server and the Data Store and their main functions, as part of the package of information technology tools developed in support of the operation of the Multilateral System.

2. It also provides an overview of the current status of the Multilateral System of Access and Benefit-sharing, based on the statistics generated by Easy-SMTA and in the Data Store, and the information gathered through the facility for the notification of PGRFA material included in the Multilateral System. The document contains some analysis, at aggregate level, of the data.

3. The document has been developed based on data that have regularly been updated since the last session of the Governing Body in September 2013.

# I. EASY-SMTA: THE ROLE OF INFORMATION MANAGEMENT IN THE OPERATION OF THE MULTILATERAL SYSTEM

1. The Multilateral System of Access and Benefit-sharing started operating in January 2007. Since then, the Secretariat has developed a set of voluntary information technology tools for users of the Standard Material Transfer Agreement (SMTA).

2. In 2009 the Secretariat, in collaboration with CIRAD, released the first version of Gene-IT, a user-friendly standalone software application to fill out and generate SMTAs in a semi-automated way. Gene-IT is distributed in CD-ROM and can also be downloaded free of charge from the Treaty's Website.

3. In order to facilitate SMTA provider's reporting obligations, the Secretariat developed and published in November 2010 an information system that allowed the online reporting at accession level for all Annex 1crops. That first version of the system was designed with the main purpose of implementing the Procedures for the Operation of the Third Party Beneficiary. The process is illustrated in Figure 1.

4. Since then, the experience accumulated by the Secretariat of the International Treaty in assisting with the reporting process and the numerous requests and suggestions received from organizations and individual users, have facilitated the release of the second version of the System called Easy-SMTA.

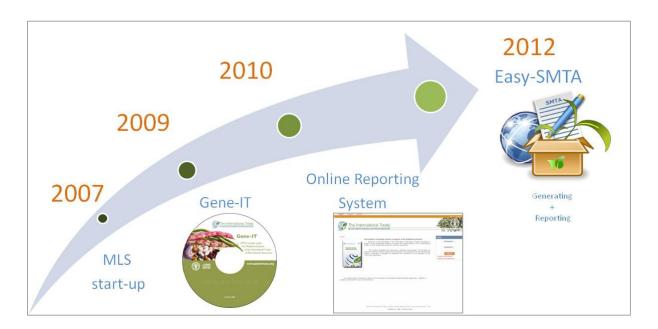


FIGURE 1. EVOLUTION OF EASY-SMTA

### Assisting the users of the Multilateral System

5. Easy-SMTA (http://mls.planttreaty.org) is a voluntary system that provides users of the Multilateral System of the International Treaty with two tools.

6. The Online SMTA Generating and Reporting tool (OSGR) supports the full SMTA workflow with functions for the generation, revision and acceptance of new SMTAs as well as for the reporting to the Governing Body on concluded SMTA according to the requirements spelled out in the SMTA and those approved later on by the Governing Body. It mainly addresses small provider needs with a practical tool. It can also be used as a reference and an example of how a SMTA management system could be implemented to comply with the current Provider's responsibilities towards the Governing Body.

7. The Online Reporting Form (ORF) focuses exclusively on the reporting to the Governing Body on concluded SMTAs, offering very similar options to the generating tool.

8. In order to facilitate their use, both tools are available in the six official languages of the United Nations (Arabic, Chinese, English, French, Russian and Spanish). The User Manual<sup>1</sup> is also available in English, French, Spanish and Arabic. Figure 2 below shows Easy-SMTA's homepage.

	nternational Treaty NETIC RESOURCES FOR FOOD AND AGRICULTURE
Main menu	Homepage
Home About Contact Register Login	<ul> <li>Welcome to the homepage of the Information Technology System developed in support of the users of the Multilateral System of Access and Benefit-sharing of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGREA).</li> <li>The Standard Material Transfer Agreement (SMTA) is a private contract with standard terms and conditions that ensures that the relevant provisions of the International Treaty are followed by individual providers and recipients of plant genetic material. This System has been developed by the Secretariat of the International Treaty to assist users with:</li> <li>1. compiling and generating SMTAs in the six official languages of the International Treaty;</li> <li>2. reporting on SMTAS concluded in accordance with the instructions made by the Governing Body of the International Treaty.</li> <li>You need to log in to be able to use the system. Please register to create a new account if you do not have one</li> </ul>

FIGURE 2. HOMEPAGE OF EASY-SMTA

#### **Global Statistics**

9. Easy-SMTA not only captures reporting information for legal purposes, but also provides extensive general statistics on the information reported, provided on a voluntary basis and under conditions of security and confidentiality. These statistics mainly refer to click-wrap SMTAs concluded through the System and discriminates between individuals and organizations.

10. Building on the experience accumulated by SINGER, Easy-SMTA can be expended as required and will be able to generate better statistics over time. It currently offers the following categorization of organizations::

- CGIAR Centre
- Commercial Company
- Farmer
- Genebank
- National Agricultural Research Organization
- Non-Governmental Organization
- Regional Organization
- University
- Germplasm/Crop network
- Other (to be specified)

11. Since the Fifth Session of the Governing Body in September 2013, the Secretariat has further developed Easy-SMTA with functions, called Easy-SMTA Pro, aimed at large providers and offering system-to-system integration.

12. Easy-SMTA also offers service called "PID Server" through which registered users can login on partner websites and search for or order material without having to enter their personal details.

<sup>&</sup>lt;sup>1</sup> Easy-SMTA Manual, <u>http://www.planttreaty.org/sites/default/files/Easy-SMTA\_Manual\_en.pdf</u>

This service has already been implemented in several large systems to support the identification of users and the generation of a directory of recipients<sup>2</sup>.

13. Easy-SMTA also records information associated with the PGRFA material that is transferred and offers a great potential to facilitate the implementation of permanent unique identifiers, as it has been outlined in other documentation prepared by the Secretariat for this meeting.<sup>3</sup>

### II. COVERAGE OF THE MULTILATERAL SYSTEM

14. The Governing Body has stressed the importance of identifying the plant genetic resources for food and agriculture that are available, under the Multilateral System. In Resolution 1/2013, the Governing Body requested all Contracting Parties that have not yet done so

"to report on their plant genetic resources for food and agriculture that are in the Multilateral System, in accordance with Article 11.2 of the Treaty, and to take measures to make information on these resources available to potential users of the Multilateral System".<sup>4</sup>

15. Since the Fifth Session of the Governing Body the Secretariat has received new notifications of inclusions from Italy, Japan, France and Poland. An increasing number of Contracting Parties have dedicated websites with detailed information on the material notified, while others have inserted search options to query and filter the accessions that are available under the SMTA.

16. *Appendix I* to this document contains an updated table with information classified into five crops/crop groups - wheat, maize, rice, other *Annex 1* resources, and non-*Annex 1* resources- of countries that are Contracting Parties and institutions that have signed Article 15 Agreements with the Governing Body, and others. The table also shows the number of accessions that had been notified to the Treaty as available under the SMTA.<sup>5</sup>

17. The same table provides an overview of the *ex situ* plant genetic resources for food and agriculture that are in principle available through the Treaty, as part of the Multilateral System. It also identifies, on a country-by-country basis, the resources known to have been made available. Moreover, information is provided on the plant genetic resources that are not currently part of the Multilateral System, as non-*Annex 1*, which some Contracting Parties and international organizations are making available under the terms and conditions of the SMTA.

18. The updated table takes into account that Swaziland, Serbia, Japan and Sri Lanka are Contracting Parties as of 1 September 2014.<sup>6</sup>

19. The information in the *Appendix* is summarized in Table 1, in order to provide a synoptic picture of the percentage of world holdings of the five crops/crop groups:

- (a) that are held by Contracting Parties and international institutions that have concluded agreements with the Governing Body under Article 15 of the Treaty;
- (b) the part of these holdings that are actually available; and,

<sup>&</sup>lt;sup>2</sup> The directory of users created by the PID Server is only available to other users (and authorised third-party systems through secure connections) and does not relates users with transfers.

<sup>&</sup>lt;sup>3</sup> IT/COGIS-1/15/3, Technical Options to Facilitate the Establishment of Data Links in the Field of Plant Genetic Resources for Food and Agriculture: Permanent Unique Identifiers. <u>http://www.planttreaty.org/sites/default/files/cogis1w3.pdf</u>

<sup>&</sup>lt;sup>4</sup> Resolution 1/2013, Paragraph 12.

<sup>&</sup>lt;sup>5</sup> The table was first published in the study "*Identifying Benefit Flows, Studies on the Potential Monetary and Non-monetary Benefits Arising from the International Treaty on Plant Genetic Resources for Food and Agriculture*". FAO. 2013. Available at: <u>http://www.planttreaty.org/content/identifying-benefit-flows</u>.

<sup>&</sup>lt;sup>6</sup> Marshall Island and Iraq havebecome Contracting Parties in the last quarter of 2014, and have not sent any notification of inclusion of material to the Secretary.

(c) the part of total world holdings that this represents.

20. Since the Fifth Session of the Governing Body the section of the table regarding the holdings of the international organizations has not changed and although the Secretary has received a few updates from Contracting Parties, the overall trend remains substantially unaltered, with a modest increment in the amount of material notified as available at global level, that does not go beyond 2 % for maize and wheat.

21. It is to be noted that the largest notification of inclusion received during this period came from Japan,<sup>7</sup> which became a Contracting Party on 28 October 2013. The notification indicated that 17,948 Annex 1 crop, grass and forages accessions maintained by the Genebank of the National Institute of Agrobiological Sciences (NIAS) could be obtained by the users of the Multilateral System under facilitated web procedures and with the SMTA.

				World h	oldings:	-		
Crops	Ex situ holdings (accessions)	% with Parties	% of Parties' holdings actually available	% with Institutions	% of Institutions' holdings actually available	% with Parties + Institutions	% of Parties' + Institutions' holdings actually available	% of total world holdings actually available
Wheat	911,511	54.78%	24.86%	16.84%	100.00%	71.62%	42.53%	30.46%
Rice	783,016	46.11%	4.42%	16.69%	100.00%	62.80%	29.82%	18.73%
Maize	330,911	45.91%	12.02%	8.14%	100.00%	54.05%	25.26%	13.65%
Other Annex 1	2,498,222	61.24%	23.24%	12.81%	100.00%	74.05%	36.52%	27.05%
Non- Annex 1	2,485,889	62.44%	4.20%	5.26%	82.98%	67.70%	10.33%	6.99%

 TABLE 1. PROPORTION OF WORLD HOLDINGS OF PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE HELD

 WITH CONTRACTING PARTIES AND ARTICLE 15 INTERNATIONAL INSTITUTIONS,

 AND RESOURCES CURRENTLY AVAILABLE UNDER THE TERMS AND CONDITIONS OF THE SMTA

22. The report presented to the Governing Body in 2013 indicated that the information regarding plant genetic resources held by natural and legal persons within the jurisdiction of Contracting Parties was very sparse and since then no changes have been recorded.

23. In addition to the resources known to be available from Contracting Parties, international institutions, and natural and legal persons in the jurisdiction of Contracting Parties, a number of resources become available under a number of other mechanisms, such as the projects funded by the Benefit-sharing Fund. As far as the second Benefit-sharing Fund cycle is concerned, at the time of preparation of this report, although most executing institutions of Window 2 projects have started implementing their plan of inclusion. Executing institutions have one year at their disposal from the conclusion of the projects to confirm the availability of the material in the Multilateral System.

### III. ANALYSIS OF DATA IN THE DATA STORE AND IN EASY-SMTA, AS OF 1 SEPTEMBER 2014

24. The System has increased the number of registered users from 261 at the end of June 2013 to 450 as of 1 September 2014. As many as 163 users have registered during the first eight months of 2014. It is to be noted that the percentage of individual users has dropped from 65 to 59% in the same period.

<sup>&</sup>lt;sup>7</sup> Notification of 1 July 2014.

25. There are currently 24 users who have reported as Providers, and 6,155 recorded as recipients with an increment of almost 600 new recipients since the last report was issued.<sup>8</sup>

26. The Treaty's Data Store contains SMTAs reported by the genebanks of five Article 15 international institutions. In addition to the regular reports of CIMMYT and IRRI, the System now also contains SMTA reports received from Bioversity International, CIP and ICARDA. Additionally, it also stores data from large genebanks of Contracting Parties.

27. As of 1 September 2014, the Data Store has recorded 21, 701 SMTAs from providers located in 16 countries, distributing material to recipients based in 155 countries. This figure represents an increment of almost 18% since June 2013. Out of those SMTAs, 15,910 were sent to recipients in Contracting Parties, while 5,791 SMTAs were sent to recipients not located in Contracting Parties of the Treaty.

28. More than 1.9 million accessions have been reported as transferred, and of those 244,218 (12.71%) are plant genetic resources for food and agriculture under development. As much as 27.8% of the material was sent to recipients based in non-Contracting Parties. In interpreting this information, it should be noted that there are Article 15 international institutions based in countries that are not yet Contracting Parties.

29. The statistics indicate also that only 2.31% of the material transferred with the SMTA belongs to non-*Annex 1 crops*. A further analysis of the reported SMTAs reveals that 208 agreements transferred non-*Annex 1* material to developing countries, an increase of 77 SMTAs compared to the figures of June 2013.

30. Moreover, 4,407 SMTAs (20.31% of the total) were issued by a non-Article 15 international institution, transferring altogether 113,331 accessions. This indicates an increment of more than 2% in the number of SMTAs issued and reported by a non-Article 15 international institution.

31. For the first time, Table 2 shows the regional distribution of incoming SMTAs and samples with data from the Treaty's Data store.

Region	Incoming SMTAs	Incoming accessions
Africa	2,632	339,149
Asia	6,349	624,792
Europe	5,243	269,335
Latin America and the Caribbean	3,546	307,006
Near East	2,175	235,295
North America	1,526	115,627
Southwest Pacific	21	30,188

TABLE 2. NUMBER OF INCOMING SMTAs and samples per region as of 20 August 2014  $\,$ 

32. After the first two years of functioning, the Data Store has accumulated 1.9 million records at accession level. The first statistics at crop level show that 59.37% for the accessions reported belong to wheat, 20,66% to rice, and ,9.86% to maize, while 2.31% are non-Annex 1 crops. Figure 3 below shows the distribution of the percentages.

<sup>&</sup>lt;sup>8</sup> Number of recipients with different names, as reported, and different email addresses, when available.

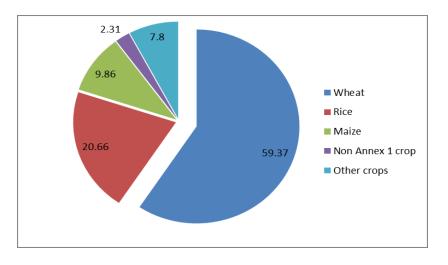


FIGURE 3. PERCENTAGES OF ACCESSIONS OF SELECTED CROPS IN THE DATA STORE AS OF 20 AUGUST 2014

# IV. THE CURRENT STATE OF IMPLEMENTATION OF THE MULTILATERAL SYSTEM

33. The update contained in this document shows that more accession-level information has been made available since the last Session of the Governing Body. Contracting Parties are also improving the way this information is published on their websites, through third-party portals, and through the notifications to the Secretariat. For the first time the Secretariat has received updated figures on inclusions with new notifications. However, the information is generally still sparse and not easy to locate. Although some modest progress has been made, documenting the material available under the terms and conditions of the SMTA remains a challenge.

34. It is to be noted that some changes to the figures and the trends are due to the change in the membership of the International Treaty (i.e. new Contracting Parties with large genebanks).

35. The reporting of material transferred from International Agricultural Research Centres of the Consultative Group on International Agricultural Research has increased notably. The Secretariat has supported the efforts of the Centres in that regard. At the same time, the notifications of inclusion and the reporting from natural and legal persons are still very modest.

36. Easy-SMTA is now feeding the Data Store with valuable data and the statistical functions are expected to continue offer a better picture on the use of the Multilateral System as more entities, particularly medium and large genebanks, become users.

37. The value of a tool able to generate general statistics on germplasm flow at global level has been discussed in the context of enhancements to the Multilateral System and he *Ad Hoc* Open-Ended Working Group to Enhance the Functioning of the Multilateral System of Access and Benefit-sharing, at its second meeting held in Geneva on 9-11 December 2014, requested additional information by the Secretariat.<sup>9</sup>

38. At its Fifth Session, the Governing Body "*requested the Secretary to encourage further inclusion of plant genetic resources for food and agriculture in the Multilateral System by relevant international institutions and international plant genetic resources networks*". Since then, the Secretariat has further developed the related facility in collaboration with major providers and as a concrete tool to inform potential users..

<sup>&</sup>lt;sup>9</sup> IT/OWG-EFMLS-2/14/Report. <u>http://www.planttreaty.org/content/second-meeting-ad-hoc-open-ended-working-group-enhance-functioning-multilateral-system-acces</u>

# Appendix

# WORLD CROP GENETIC RESOURCES AND MATERIAL AVAILABLE UNDER SMTAS

Countries and Internatio nal	Treaty membe		Wheat			Rice			Maize			Other	:	Ν	lon-Annex 1		TOTA L Annex	TOTA L Annex 1 &
Institution s	r	accessi ons	accessio ns availabl e	% availa ble	accessio ns	<i>access</i> io ns availabl e	% availa ble	accessio ns	accessio ns availabl e	% availa ble	Annex 1	accessio ns availabl e	% availa ble	accessio ns	accessio ns availabl e	% availa ble	1	non- Annex 1
Afghanist an	$\checkmark$	1,726			102			101			997			39			2,926	2,965
Albania	v	555						643			846			1,610			2,044	3,654
Algeria	v										402			583			402	985
Andorra																	0	0
Angola	V	20			44			861			1,577			627			2,502	3,129
Antigua and Barbuda								5			79			92			84	176
Argentina		4,657			1			6,457			27,038			38,647			38,153	76,800
Armenia	٧	4,777	152	3.18%				21	14	66.67 %	5,218	1,287	24.66 %	2,246	12	0.53%	10,016	12,262
Australia	٧	24,740			1,723			1,330			98,929			85,823			126,72 2	212,54 5
Austria	٧	1,263	1,323	104.75 %	1			387	60	15.50 %	5,590	4,150	74.24 %	3,813			7,241	11,054
Azerbaijan		3,314						1,046			2,237			7,330			6,597	13,927
Bahamas																	0	0
Bahrain																	0	0
Banglades h	٧	565			6,806			69			8,622			17,978			16,062	34,040
Barbados											77			101			77	178
Belarus																	0	0
Belgium	V	1,809						1,000			4,938	1,909	38.6%	1,866			7,747	9,613
Belize					28			25			59			89			112	201

1

Benin	٧				597			668			5,173			492			6,438	6,930
Bhutan	٧							40						48			40	88
Bolivia		100						1,480			1,912			14,265			3,492	17,757
Bosnia and Herzegovi na														31			0	31
Botswana								13			3,497			1,031			3,510	4,541
Brazil	٧	31,913			23,497			11,241			138,71 0			141,726			205,36 1	347,08 7
Bulgaria	v	16,662			913			4,697			25,885			14,005			48,157	62,162
Burkina Faso	٧				531			201			1,150			638			1,882	2,520
Burundi	٧																0	0
Cambodia	٧				2,131												2,131	2,131
Cameroon	v										645			112			645	757
Canada	٧	22,670	12,307	54.29 %	29	29	100.00 %	1,268	1,247	98.34 %	114,24 3	92,959	81.37 %	12,564	10,917	86.89 %	138,21 0	150,77 4
Cape Verde																	0	0
Central African Republic	٧																0	0
Chad	٧							1			59			9			60	69
Chile		22,681			3,316			2,898			11,915			3,796			40,810	44,606
China		45,864			179,786			19,323			104,01 2			196,403			348,98 5	545,38 8
Colombia		1,905			1,764			20,335			14,819			25,030			38,823	63,853
Comoros																	0	0
Congo, Democrati c Republic of	٧										300			18,205			300	18,505
Congo	٧							3			769			152			772	924
Cook Islands	٧										101			85			101	186
Costa Rica	٧							30			2,573			4,267			2,603	6,870

Côte d'Ivoire	v				12,119		600			4,373			25,487			17,092	42,579
Croatia	٧	106	63	59.43 %			176	151	85.80 %	2766	173	6.25%				3,048	3,048
Cuba	٧	91		70	2,488		861		70	2,604			13,429			6,044	19,473
Cyprus	٧	7,896	80	1.01%						3,783	405	10.71 %	520			11,679	12,199
Czech Republic	٧	11,422	11,275	98.71 %			791	788	99.62 %	20,875	19,377	% 92.82 %	16,789	1,147	6.83%	33,088	49,877
Democrati c People's Republic of Korea	٧															0	0
Denmark	٧									925			1,522			925	2,447
Djibouti	٧															0	0
Dominica										39			41			39	80
Dominican Republic					48		6			610			3,104			664	3,768
Ecuador	٧	919			2,238		4,493			12,533			14,604			20,183	34,787
Egypt	٧	2,867					1,605			3,984	40	1.00%	459			8,456	8,915
El Salvador	٧						411			769			652			1,180	1,832
Equatorial Guinea																0	0
Eritrea	٧															0	0
Estonia	٧	293	442	150.85 %						1,274	2,092	164.21 %	1,228	225	18.32 %	1,567	2,795
Ethiopia	٧	13,421			133		1,219			37,642			16,423			52,415	68,838
Fiji	٧						15			385			310			400	710
Finland	٧	356								1,856			96			2,212	2,308
France	٧	27,421			17,654		18,298			71,297	622	0.87%	129,052			134,67 0	263,72 2
Gabon	٧									48			43			48	91
Gambia																0	0
Georgia		68					8			25			553			101	654
Germany	٧	29,794	29,220	98.07 %			1,512	1,244	82.28 %	78,157	77,563	99.24 %	38,979	34,017	87.27 %	109,46 3	148,44 2

Ghana	٧				550			1,260			5,137			8,510			6,947	15,457
Greece	٧	2,755			476			2,341			6,304			4,429			11,876	16,305
Grenada											11			28			11	39
Guadelou pe								200			292			3			492	495
Guatemal a	٧	15		:	14			30			3,698			2,221			3,757	5,978
Guinea	v			1	78			45			116			1,010			239	1,249
Guinea- Bissau	٧																0	0
Guyana					216						113			2,580			329	2,909
Haiti								54			513						567	567
Honduras	v	5						910			5,066			2,028			5,981	8,009
Hungary	v	13,801			348			5,976			26,482			26,682			46,607	73,289
Iceland	v																0	0
India	٧	66,442			127,012			7,340			202,15 8			237,033			402,95 2	639,98 5
Indonesia	٧				7,263						11,990			7,238			19,253	26,491
Iran, Islamic Republic of	٧	21,107			2,852			269			27,309			17,865			51,537	69,402
Iraq		445			31			10			275			382			761	1,143
Ireland	٧	32	38	118.75 %							1,085	1,374	126.64 %	659	6	0.91%	1,117	1,776
Israel		17,912			50			300			14,750			9,608			33,012	42,620
Italy	٧	42,117	32,937	78.20 %	388	60	15.46 %	5815	5701	98.04 %	25,548	5,330	20.86 %	23,789			73,868	97,657
Jamaica	v										910			310			910	1,220
Japan	٧	43,860	3598	8.20%	52,489	8462	16.12 %	8,332	786	9.43%	106,86 4	4607	4.31%	90,690	495	0.55%	211,54 5	302,23 5
Jordan	٧	1,228									646			1,396			1,874	3,270
Kazakhsta n		27,517			1,018			783			13,675			19,906			42,993	62,899
Kenya	٧	326	102	31.29 %	1,060	910	85.85 %	3,574	1,226	34.30 %	24,910	10,635	42.69 %	23,989			29,870	53,859
Kiribati	٧													14			0	14

Kuwait	٧															0	0
Kyrgyzstan	٧	314						51			745			437		1,110	1,547
Lao, People's Democrati c Republic	v				13,193			106			485			1,179		13,784	14,963
Latvia	٧	703									2,760			3,993		3,463	7,456
Lebanon	٧	90									135	46	34.07 %	432		225	657
Lesotho	٧	71						139			174			264		384	648
Liberia	٧										23			1,215		23	1,238
Libya	٧	1,801									3,156			2,731		4,957	7,688
Lithuania	٧	38						1			2,566			4,236		2,605	6,841
Luxembou rg	٧															0	0
Madagasc ar	٧	7999	352	4.40%	2,000	6,210	310.50 %	366	325	88.80 %	490	1,112	226.94 %	1,109		10,855	11,964
Malawi	٧	4			285	73	25.61 %	214	80	37.38 %	8,906	1,266	14.22 %	1,157		9,409	10,566
Malaysia	٧				15,534						3,476			66,360		19,010	85,370
Maldives	٧															0	0
Mali	٧				1,334						5,379			689		6,713	7,402
Malta																0	0
Marshall Islands																0	0
Mauritani a	٧															0	0
Mauritius	٧							16			59			195		75	270
Mexico		268						41,228			44,368			43,142		85,864	129,00 6
Micronesi a, Federated States of																0	0
Moldova, Republic of																0	0
Monaco																0	0

Mongolia																0	0
Monteneg ro	v												10			0	10
Montserra										19			15			19	34
t Morocco	V	6,762	351	5.19%	750		1,105			13,023			6,686			21,640	28,326
Mozambiq	v		331	5.1570													
ue		2			356		274			799			1,099			1,431	2,530
Myanmar	V									4 705						0	0
Namibia	V				15		11			1,706			1,264			1,732	2,996
Nauru	V	381			2 167		767			4 250			1 262			0 8.665	0
Nepal Netherlan				74.61	3,167				94.21	4,350		87.49	1,362			8,665	10,027
ds	V	6,585	4,913	%			518	488	%	14,984	13,109	%	41,096			22,087	63,183
New Zealand		2,667								11,984			16,075			14,651	30,726
Nicaragua	٧				15		150			468			784			633	1,417
Niger	٧	59			89		18			5,393			7,381			5,559	12,940
Nigeria		1,742			3,551		19			2,921			4,390			8,233	12,623
Niue										94						94	94
Nordic Genebank		2,054	2,914	141.87 %			7	11	157.14 %	24,749	28,573	115.45 %	2,502	2,502	100.00 %	26,810	29,312
Norway	٧									203			737			203	940
Oman	٧									101			413			101	514
Pakistan	٧	10,017			5,099		1,139			16,658			10,426			32,913	43,339
Palau	٧									146						146	146
Panama	٧				750		53			449			718			1,252	1,970
Papua New Guinea					119					3,390			1,035			3,509	4,544
Paraguay	٧	206					338			472			601			1,016	1,617
Peru	٧	7,800			4,917		3,939			14,905			28,145			31,561	59,706
Philippine s	٧	2			7,119		2,017			16,982			20,379			26,120	46,499
Poland	٧	13,763	3,248	23.60 %			1,523	29	1.90%	70,012	34,634	49.47 %	18,169	40	0.22%	85,298	103,46 7

Portugal	٧	2,416	50	2.07%	226			25,132	50	0.20%	10,487	713	6.80%	6,305			38,261	44,566
Puerto Rico											215			274			215	489
Qatar	٧																0	0
Korea, Republic of	٧				26,906						17,660			113,170			44,566	157,73 6
Romania	٧	3,365	1,141	33.91 %	669			7,352	2,899	39.43 %	15,805	1,336	8.45%	16,646	996	5.98%	27,191	43,837
Russian Federation		36,501			3,917			10,483			92,919			73,386			143,82 0	217,20 6
Rwanda	٧	100	1	1.00%		1	#DIV/0 !	576	1	0.17%	4,569	26	0.57%	923			5,245	6,168
Saint Kitts and Nevis																	0	0
Saint Lucia	٧							1			99			41			100	141
Saint Vincent and the Grenadine s											90			20			90	110
Samoa	٧										103			35			103	138
San Marino																	0	0
Sao Tome and Principe	٧																0	0
Saudi Arabia	٧																0	0
Senegal	٧				2,265			106	14	13.21 %	1,346	35	2.60%	3,182			3,717	6,899
Serbia	٧	2,431						5,475			14,220			5,312			22,126	27,438
Seychelles	٧										82			287			82	369
Sierra Leone	v				500			7			522			819			1,029	1,848
Slovakia	٧	4,214						2,218			11,686			9,472			18,118	27,590
Slovenia	٧										1,268			999			1,268	2,267
Solomon Islands											1,126			4			1,126	1,130
Somalia											94						94	94

South Africa		3,743			301		3,063			9,204			8,829			16,311	25,140
Spain	٧	5,330	2,549	47.82 %	5		3,052	2,139	70.09 %	29,587	11,469	38.76 %	26,542			37,974	64,516
Sri Lanka	٧				6,518		643			3,989			7,242			11,150	18,392
Sudan	٧									3,369			1,809			3,369	5,178
Suriname	٧			1	1,799					97			125			1,896	2,021
Swaziland	٧				1		175			302			239			478	717
Sweden	٧															0	0
Switzerlan d	٧	7,383	7,544	102.18 %			191	321	168.06 %	8,180	9,636	117.80 %	12,059	12,719	105.47 %	15,754	27,813
Syrian Arab Republic	v	2,259			3		205			2,348			1,036			4,815	5,851
Tajikistan		1,725			2		9			1,407			410			3,143	3,553
Thailand					38,615		4,314			9,359			16,156			52,288	68,444
The Former Yugoslav Republic of Macedoni a		46			193		40			176			733			455	1,188
Timor- Leste																0	0
Togo	٧				84		111			760			312			955	1,267
Tonga										8						8	8
Trinidad and Tobago	v				105		3			731			375			839	1,214
Tunisia	٧	163								86			255			249	504
Turkey	٧	5,487			305		1,639			14,751			26,156			22,182	48,338
Turkmenis tan																0	0
Tuvalu										18			22			18	40
Uganda	٧	419					25			9,037			2,026			9,481	11,507
Ukraine		7,381			345		5,801			22,579			28,601			36,106	64,707

United Kingdom	٧	11,836	9,513	80.37 %	21			18			57,605	27,367	47.51 %	55,838	2,137	3.83%	69,480	125,31 8
United Republic of Tanzania	٧	5			224			371			4,075	277	6.80%	1,810			4,675	6,485
United States of America		66,994			41,855			26,890			210,68 4			210,910			346,42 3	557,33 3
Uruguay	٧	4,308			846			1,675			4,811			5,182			11,640	16,822
Uzbekista n		11,030			773			2,200			9,266			48,654			23,269	71,923
Vanuatu											662			2			662	664
Venezuela , Bolivarian Republic of	٧				2,506			1,560			10,965			8,946			15,031	23,977
Viet Nam		53			14,998			4,790			6,259			20,099			26,100	46,199
Yemen	V	10						2			57			160			69	229
	v	10									-							
Zambia	v	10			218	196	89.91 %	456	685	150.22 %	4,036	3,459	85.70 %	4,364			4,727	9,091
Zambia Zimbabwe					218 49	196			685			3,459						
	٧		124,113	16.37 %		196 <b>15,941</b>		456	685 <b>18,259</b>		4,036	3,459 <b>355,581</b>		4,364	65,213	2.77%	4,727	9,091
Zimbabwe Subtotal for	√ √	17 <b>757,98</b>	124,113		49		%	456 29		%	4,036 747 <b>2,178,1</b>		% 16.32	4,364 3,982 <b>2,351,5</b>	65,213	2.77%	4,727 825 <b>3,892,4</b>	9,091 4,807 <b>6,243,9</b>
Zimbabwe Subtotal for countries Africa Rice	√ √ 126	17 <b>757,98</b>	124,113		49 652,336	15,941	% <b>2.44%</b> 100.00	456 29		%	4,036 747 <b>2,178,1</b>		% 16.32	4,364 3,982 <b>2,351,5</b>	<b>65,213</b> 8	<b>2.77%</b> 100.00 %	4,727 825 3,892,4 50	9,091 4,807 <b>6,243,9</b> <b>89</b>

Internatio nal Maize and Wheat Improvem ent Centre (CIMMYT)	v	113,44 9	113,449	100.00 %				26,421	26,421	100.00 %	33,521	33,521	100.00 %	180	180	100.00 %	173,39 1	173,57 1
Internatio nal Potato Centre (CIP)	٧										11,929	11,929	100.00 %	3,117	3,117	100.00 %	11,929	15,046
Internatio nal Centre for Agricultur al Research in the Dry Areas (ICARDA)	v	38,850	38,850	100.00 %							80,704	80,704	100.00 %	13,239	13,239	100.00 %	119,55 4	132,79 3
World Agroforest ry Centre (ICRAF)	٧													1,785	1,785	100.00 %	0	1,785
Internatio nal Crops Research Institute for the Semi-Arid Tropics (ICRISAT)	v										98,912	98,912	100.00 %	19,970			98,912	118,88 2
Internatio nal Institute of Tropical Agricultur e (IITA)	v										25,299	25,299	100.00 %	2,297			25,299	27,596
Internatio nal Livestock Research Institute	V	12	12	100.00 %	17	17	100.00 %	8	8	100.00 %	4,112	4,112	100.00 %	14,614	14,614	100.00 %	4,149	18,763

(ILRI)																		
Internatio nal Rice Research Institute (IRRI)	٧				109,136	109,136	100.00 %			2				25	25	100.00 %	109,13 6	109,16 1
Tropical Agricultur al Research and Higher Education Centre (CATIE)	٧							421	421	100.00 %	1,577	1,577	100.00 %	9,027	9,027	100.00 %	1,998	11,025
Centre for Pacific Crops and Trees (CePaCT) – SPC Communit Y	٧										1,445	1,445	100.00 %	65	65	100.00 %	1,445	1,510
Internatio nal Cocoa Genebank	v													2,325	2,325	100.00 %		2,325
Internatio nal Coconut Genebank for Africa and the Indian Ocean	٧	890	890	100.00 %													890	890
Internatio nal Coconut Genebank for the South Pacific	v	329	329	100.00 %													329	329

Mutant Germplas m Repository of the FAO/IAEA Joint Division	v																0	0
World Vegetable Centre (AVRDC)	v	0			0			73	73	100.00 %	19000	19000	100.00 %	42104	42104	100.00 %	19,073	61,177
West Indies Central Sugarcane Breeding Station														3,507			0	3,507
Subtotal for Int. Institutions		153,53 0	153,530	100%	130,680	130,680	100%	26,923	26,923	100%	320,07 7	320,077	100%	134,350	108,576	81%	631,21 0	765,56 0
Grand Total		911,51 1	277,643	30.46 %	783,016	146,621	18.73 %	330,911	45,182	13.65 %	2,498,2 22	675,658	27.05 %	2,485,8 89	173,789	6.99%	4,523,6 60	7,009,5 49