Bretting, Peter

From: Susan McCouch <srm4@cornell.edu>
Sent: Wednesday, October 28, 2015 9:34 AM
To: Bretting, Peter
Cc: Susan McCouch; Peter Wenzl
Subject: FW: GLIS resolution
Attachments: RES3_GLIS_14102015_1423_FL_FINAL_cln.docx

Dear Peter, Here is Resolution 3/2015 from the meeting of the Treaty with the Governing Body.
-Susan

Food and Agriculture Organization of the United Nations

The International Treaty ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

RESOLUTION 3/2015

THE VISION AND THE PROGRAMME OF WORK ON THE GLOBAL INFORMATION SYSTEM

THE GOVERNING BODY,

Recalling its previous decisions on the Global Information System and particularly Resolution 10/2013,

Further recalling the interlinkages between the Global Information System of Article 17 and the Multilateral System of Access and Benefit-sharing as referred to in Article 13.2.a);

Mindful of the role of the International Treaty and the Food and Agriculture Organization of the United Nations as caretakers of agro-biodiversity, including information related to PGRFA;

Acknowledging the need to facilitate the documentation and dissemination of PGRFA available in the Multilateral System and its associated information to facilitate research, plant breeding and training subject to applicable law;

Thanking the Government of Germany for the financial support provided for COGIS and the Government of Spain for their support to the PGRFA analysis tools during the 2014-2015 biennium;

1. ***Adopts*** the *Vision* and the *Programme of Work* contained in Annexes 1 and 2 respectively;

2. ***Decides*** to establish the Scientific Advisory Committee on the Global Information System of Article 17 with the terms of references contained in Annex 3. Subject to the availability of financial resources, the Committee will meet at least twice during the 2016-2017 biennium.

3. ***Requests*** the Secretary to implement the programme of work based on the recommendations of the Scientific Advisory Committee, and ***further requests*** the Secretary to submit to the Governing Body a progress report at each regular session and a proposal for review of the programme of work when appropriate, based on the recommendations of the Scientific Advisory Committee;

4. ***Invites*** Contracting Parties, other governments and stakeholders to provide the necessary resources to implement a set of pilot activities of the Programme of Work;

5. ***Notes that*** the Secretariat participates in the Joint Facilitation Unit of the DivSeek initiative, with the view to enabling synergies with the Global Information System in full respect of the provisions of the Treaty, and ***requests*** the Secretary to continue doing it;

6. ***Further requests*** the Secretary to invite DivSeek stakeholders to report on the implications for the objectives of the Treaty of the technologies underlying the DivSeek initiative and to compile a synthesis report on this for consideration by the Governing Body at its Seventh Session;

7. ***Requests*** the Secretary and the Contracting Parties to continue promoting initiatives to support national and regional programmes in the development and transfer of information technologies for, and data analysis of, PGRFA such as CAPFITOGEN and the Platform for Co-development and Transfer of Technologies in support of the programme of work as detailed in Annex 2.

8. ***Encourages*** the Secretary and the Contracting Parties to promote synergies and connections among existing information systems and national and regional information networks, as well as with the operations of the Multilateral System and the projects funded by the Benefit-sharing Fund for the documentation of PGRFA, as long as they operate in accordance with the provisions of the Treaty;

9. ***Requests*** the Secretary to design a monitoring and assessment mechanism on the usefulness and effectiveness of the Global Information System according to Article 17.1, subject to availability of resources, based on the recommendations of the Scientific Advisory Committee and present a draft to the next Session of the Governing Body;

10. ***Requests*** the Secretary to report on the above to the next Session of the Governing Body

Annex 1

Vision for the Global Information System on PGRFA

The Global Information System for PGRFA integrates and augments existing systems to create the global entry point to information and knowledge for strengthening the capacity for PGRFA conservation, management and utilization.

The development of a truly effective Global Information System as foreseen in the International Treaty involves, *inter alia:* strengthening existing systems and, where gaps remain, establishing new systems and initiatives; promoting inter-connectivity among systems; and providing overarching mechanisms to ensure ready access to the information and services provided. This translates into the following objectives:

1-To create a web-based platform with use-oriented entry points to PGRFA information;

2-To provide a comprehensive overview and facilitate access to sources of PGRFA and associated information;

3-To promote and facilitate interoperability among existing systems by providing clear principles, technical standards and appropriate tools to support their operations in accordance to the principles and rules of the Treaty;

4-To promote transparency on the rights and obligations of users for accessing, sharing and using PGRFA associated information and to establish ways to exercise those rights and obligations within the Global Information System;

5-To create and enhance opportunities for communication and international and multidisciplinary collaboration to increase knowledge about and add value to PGRFA;

6-To provide capacity development and technology transfer opportunities for the conservation, management and use of PGRFA and associated information and knowledge paying special attention to the needs of developing countries;

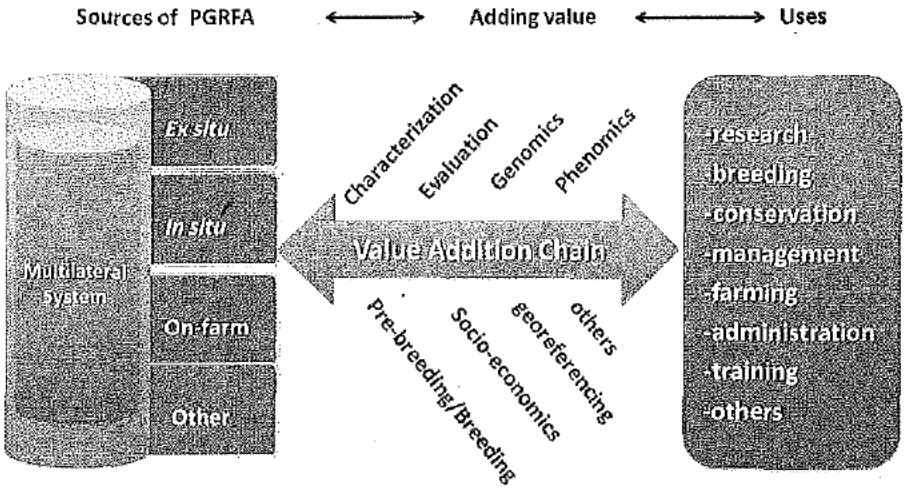
7-To create a mechanism to assess progress and monitor effectiveness of the Global Information System.

Annex 2

Programme of Work on the Global Information System (2016-2022)

The Programme of Work will cover an initial period of six years. It will be implemented through a phased approach and funded through extra budgetary contributions.

The value chain of PGRFA, illustrating the components of and linkages between the three elements of the value chain, namely the sources of PGRFA, adding value, and using PGRFA.



1-To create a web-based platform with use-oriented entry points to PGRFA information

a. To set up the technical infrastructure needed for the development of the Platform;
b. To engage with FAO, the Convention on Biological Diversity and its Nagoya Protocol and other organizations to build on the experience accumulated on the development of global portals;
c. To define use case scenarios for target groups and set up mechanisms to get feedback from them;
d. To create a prototype of the global portal able to receive feedback from the users on the SMTA material;

2-To provide a comprehensive overview and facilitate access to sources of PGRFA and associated information

a. To create an index of sources of information, knowledge and other materials;
b. To strengthen the capacity of genebanks and other providers to document their holdings using traditional and modern methods and to facilitate access to that information and to the genetic resources in accordance with the provisions of the Treaty;
c. To enable recipients of PGRFA to make available to the MLS all non-confidential information according to applicable law that results from their research and development carried out on the material received, in compliance with their obligation under SMTA Art 6.9;
d. To allow quick access to information on the material available in the Multilateral System of Access and Benefit-sharing (MLS) at sample level;
e. To strengthen capacity to develop national and regional inventories and information systems and networks.

3-To promote and facilitate interoperability among existing systems by providing clear principles, technical standards and appropriate tools to support their operations in accordance to the principles and rules of the Treaty;

a. To develop a common standard for Permanent Unique Identifiers applied to PGRFA and an operational mechanism to promote the adoption of DOIs;
b. To develop further training and capacity development material, including e-learning material, in collaboration with other relevant organizations;
c. To recommend common standards for data and metadata and develop further standards (e.g. for phenotypic data) based on existing experiences in other sectors;
d. To establish functional connections with other initiatives relevant for the adoption of open data and standards to PGRFA;
e. To develop the technical standards required for interoperability between different PGRFA information management systems;

4-To promote transparency on the rights and obligations of users for accessing, sharing and using PGRFA associated information and to establish ways to exercise those rights and obligations within the Global Information System;

a. To analyse the institutional, organizational, policy and legal factors for PGRFA information access, sharing and use in the context of the Treaty's provisions, in particular Articles 12 and 13;
b. To understand the applicability and impacts of models developed in other parts of the Treaty, such as the Multilateral System of Access and Benefit Sharing, and initiatives such as DivSeek.

5-To create and enhance opportunities for communication and international and multidisciplinary collaboration to increase knowledge about and add value to PGRFA

a. To identify and create tools, mechanisms and opportunities for communication and collaboration with partners and users of the system (media, mailing lists, etc);
b. To conduct focused surveys with a wide range of users and validation methods;
c. To strengthen the linkages among stakeholders to concentrate research on high-priority germplasm jointly identified by them;

6-To provide capacity development and technology transfer opportunities for the conservation, management and use of PGRFA and associated information and knowledge paying special attention to the needs of developing countries

a. To convey and support regional meetings and scientific conferences related to new technologies and themes;
b. To provide access to training materials for capacity development;
c. To support the training of staff in areas such as taxonomy, information management and bioinformatics in collaboration with relevant partners;
d. To design mechanisms to promote training opportunities across institutions (training of trainers, match-making);
e. To provide training for the genebank managers of the future;
f. To facilitate transfer of relevant technologies to developing countries;
g. To raise awareness among stakeholders in the Global Information System on traditional knowledge relevant to PGRFA in accordance with the Treaty's provisions and in harmony with the Convention on Biological Diversity

7. To create a mechanism to assess progress and monitor effectiveness of the Global Information System

a. To implement a feedback system for the portal in order to allow assessments of the usefulness and effectiveness of the Global Information System;
b. To promote periodic consultations among Contracting Parties, and stakeholders, users and providers, about the usefulness and effectiveness of the Global Information System.

Annex 3

Terms of Reference for the Scientific Advisory Committee on Article 17

Objectives

The Governing Body provides guidance on the development and strengthening of the Global Information System, to facilitate the exchange of information, based on existing information systems, on scientific, technical and environmental matters related to plant genetic resources for food and agriculture (PGRFA).

The Scientific Advisory Committee (Committee) shall advise the Secretary on:

- general recommendations on the development and deployment of the Global Information System and its components as adopted by the Governing Body;
- the discovery of new areas of work with potential impact on the System;
- the selection of pilot activities for the Global Information System and, upon request of the Secretary, other initiatives and actions to sustain the operation of the Global Information System, and the further update of the Programme of Work.

In particular, the Committee shall provide scientific advice to the Secretary on the following items:

1. the effectiveness and efficiency of the Global Information System as a mechanism to promote advice regarding scientific, technical and environmental cooperation on PGRFA matters;
2. the exchange of PGRFA-related information and the transfer of publicly available expertise, technology and scientific cooperation;
3. scientific and technical components of the Global Information Systems and its Programme of Work as recommended by the Governing Body;
4. cooperation with other relevant international and regional scientific and technical cooperation and technology transfer initiatives, including the Access and Benefit-sharing Clearing House Mechanism of the Nagoya Protocol;
5. means to facilitate the implementation of the Global Information System at the national level and the establishment of a Stakeholder Platform;
6. scientific, technical and environmental cooperation and benefits of all the Treaty activities, including the Multilateral System and Access and Benefit-sharing and the Programme of Work on Sustainable Use

Subject to the availability of financial resources, the Committee will hold two meetings per biennium.

Composition

The Committee is composed of:

- up to 2 scientific experts from each Region, nominated by the Vice-chairpersons of the Governing Body of each respective Region;
- 10 additional scientific and technical experts appointed by the Secretary including experts suggested by the regions and relevant stakeholders, taking into account the required range of technical expertise and regional balance as appropriate.

The members shall be selected for their scientific expertise and understanding of the Global Information System and the International Treaty, taking into account the need for specialized and in-depth expertise including: bioinformatics and molecular genetics; the 'omics', in particular genomics, phenomics and proteomics; management of environmental and geo-spatial data about plant genetic resources; scientific,

taxonomy, crop wild relatives and genebank management and *ex situ, in situ* and on-farm conservation of PGRFA, technical cooperation; capacity-building; system integration, information exchange and data sharing; fair and equitable benefit sharing and legal expertise in the relevant international law and regulations; partnerships with other organizations, institutions and initiatives.

The Committee shall elect its Co-chairpersons from among the experts.

The Secretariat of the International Treaty will facilitate the work of the Committee and report to the Governing Body.

The mandate and the composition of the Committee may be renewed by the Governing Body at its Seventh Session.

Bretting, Peter

From: Bretting, Peter
Sent: Wednesday, October 28, 2015 10:14 AM
To: 'Susan McCouch'
Cc: Peter Wenzl
Subject: RE: GLIS resolution

Thanks, much appreciated. Yes, I was involved in drafting the initial Programme of Work during the COGIS, thus the initial PoW actually preceded the DivSeek Partners Assembly the next day. Interesting timing, that's for sure. Much of the initial PoW reflects the E. U.'s, Australia's, and North America's perspectives and thinking. I'll compare the final version which was approved by the GB-6 with our initial version.

Nice to chat with you. Enjoy the Bier und Weisswurst im Bonn, Susan!

Peter

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E-mail peter.bretting@ars.usda.gov
Web site: http://www.ars.usda.gov/research/programs/programs.htm?NP_CODE=301

From: Susan McCouch [mailto:srm4@cornell.edu]
Sent: Wednesday, October 28, 2015 9:34 AM
To: Bretting, Peter
Cc: Susan McCouch; Peter Wenzl
Subject: FW: GLIS resolution

Dear Peter, Here is Resolution 3/2015 from the meeting of the Treaty with the Governing Body.
-Susan

Bretting, Peter

From: Bretting, Peter
Sent: Thursday, October 29, 2015 8:01 AM
To: 'Susan McCouch'
Cc: Peter Wenzl
Subject: RE: GLIS resolution

Thanks for the text of the resolution, Susan. For the most part, it resembles the text developed at the COGIS. From the standpoint of DivSeek, the most problematic might be text added by the GB as paragraph 2:

"*Further requests* the Secretary to invite DivSeek stakeholders to report on the implications for the objectives of the Treaty of the technologies underlying the DivSeek initiative and to compile a synthesis report on this for consideration by the Governing Body at its Seventh Session;"

This is really strange. The DivSeek stakeholders aren't experts on the Treaty, nor is it their role to determine "the implications for the objectives of the Treaty of the technologies underlying the DivSeek initiative." The "implications" must be determined by the GB itself. Nor is it the role for the DivSeek stakeholders to compile a "synthesis report." Information on DivSeek is readily accessible from www.divseek.org and more will likely be added during the next two years.

Some of the text on the Program of Work is more positive:

"To promote transparency on the rights and obligations of users for accessing, sharing and using PGRFA associated information and to establish ways to exercise those rights and obligations within the Global Information System;

a. **To analyse the institutional, organizational, policy and legal factors for PGRFA information access, sharing and use in the context of the Treaty's provisions, in particular Articles 12 and 13;**
b. **To understand the applicability and impacts of models developed in other parts of the Treaty, such as the Multilateral System of Access and Benefit Sharing, and initiatives such as DivSeek."**

This suggests that DivSeek might independently develop valuable models which would be adapted by the GIS.

The Governance subcommittee's teleconference yesterday was productive. We'll have some concrete proposals for the Steering Committee. I did mention your concern about governance changes potentially triggering the need for changing the charter. Perhaps not surprisingly, the reply was "Well, it depends on the nature of the governance changes."

Safe travels!

Peter

Peter Bretting
USDA/ARS Office of National Programs
Room 4-2212, Mailstop 5139
5601 Sunnyside Avenue

Bretting, Peter

From:	Hannes Dempewolf <hannes.dempewolf@divseek.org>
Sent:	Friday, January 02, 2015 11:09 AM
To:	Info DivSeek
Cc:	Peter Wenzl; Daniele Manzella; Francisco Lopez; Ruth Bastow; Powell, Wayne (CGIAR Consortium)
Subject:	DivSeek technical meeting: agenda
Attachments:	DivSeek Technical Meeting agenda.pdf

Dear participants of the DivSeek technical meeting,

As you all know, the DivSeek technical meeting will be held after the Partners assembly in the afternoon of January the 9th and will be an opportunity for some of the projects and initiatives that could be associated with DivSeek to present their work. A further objective is to agree on the best way to engage the DivSeek community to discuss the scope and nature of a common set of standards, data exchange formats as well as guidelines and best practices. The meeting also aims to help the DivSeek community understand where the major gaps are and what may be needed to fill these gaps in the future. Based on the overview and the gap assessment, the meeting will set the priorities for the first DivSeek program of work. Please find attached a document that describes the agenda, lists the presenters and suggests some possible topics for DivSeek's first program of work at the end.

Here again the logistical details of the technical meeting (which will take place at the same location as the Partners Assembly in the morning):

Time and date: 9.01.2015, 1pm to 6pm
Location: San Diego Hilton Gaslamp District Hotel

The technical meeting will be chaired by Susan McCouch and the rapporteur will be Peter Wenzl.

We wish you all a safe trip to San Diego!

Thanks,
Hannes (on behalf of the DivSeek facilitation unit)

Technical Meeting

Time and date: 9.01.2015, 1pm to 6pm
Location: San Diego Hilton Gaslamp District Hotel
Chair: Susan McCouch
Rapporteur: Peter Wenzl

Background

This meeting will be held after the Partners assembly and will be an opportunity for some of the projects and initiatives that could be associated with DivSeek to present their work. A further objective is to agree on the best way to engage the DivSeek community to discuss the scope and nature of a common set of standards, data exchange formats as well as guidelines and best practices. The meeting also aims to help the DivSeek community understand where the major gaps are and what may be needed to fill these gaps in the future. Based on the overview and the gap assessment, the meeting will set the priorities for the first DivSeek programme of work. Possible topics for DivSeek's first program of work can be found at the end of this document.

In order to allow for a broad set of projects and initiatives to be presented, we have asked the presenters to present short 'lightning talks' using a presentation template. We envisage that each speaker provides a 5 - 10 minute summary presentation on their project/program, aims and objectives, explanation of how data is being collected, described and managed, including (if applicable) what are the underlying database infrastructures, what standards and ontologies are being used and how data will be made available in the long-term. We have also invited an additional set of presenters to provide a few slides about their organization's 'perspective' on DivSeek. Since time is limited, we ask all presenters to please not go beyond 5 to 10 minutes for each presentation.

Agenda

Introduction

Set of key summary presentations on projects as well as cyber-infrastructure solutions, tools and ontologies (5 to 10 minutes each)

Coffee & Tea break

Set of 'perspectives' presentations (5 to 10 minutes each)

Plenary discussion to set priorities for DivSeek's first program of work

Presenters

Presentations on projects:

- IRRI's genebank and the International Rice Informatics Consortium (IRIC) - Ruaraidh Sackville Hamilton
- CIMMYT's Seeds of Discovery project - Kevin Pixley
- ICRISAT's genebank and associated genomics efforts - Rajeev Varshney
- IPK's BRIDGE project – Nils Stein

Presentations on cyber-infrastructure solutions, tools, ontologies:

- Plant Ontology – Laurel Cooper
- James Hutton Institute's GERMINATE platform - David Marshall
- iPlant - Matt Vaughn
- Cornell GOBEE project - Susan McCouch
- EBI and ELIXIR - Paul Kersey

'Perspectives' presentations:

- A national genebank's perspective - Theo van Hintum
- CGIAR consortium office – Wayne Powell
- Funder's perspective 1 – Steve Visscher (BBSRC)
- Funder's perspective 2 – Cindy Bell (Genome Canada)
- 'Institutional and Organizational Factors for Enabling Data Access, Exchange and Use Aims for DivSeek' - Eric Welch/Selim Louafi

Possible topics for DivSeek's first program of work

1. *Facilitating the formation of research and data-sharing networks*
    - Directory of current projects across globe: Who, where, what is the main focus and who is the main funder? GPC is willing to assist with a survey to collect data.
    - Social network analysis: How/with whom do researchers in individual projects interact? Final outcome would be a map that visualizes all interactions among researchers and projects.
    - Inventory of tools, pipelines, repositories, resources and approaches used in individual projects. This will help the community to reflect on common platforms, well-utilised tools and popular repositories.

2. *Working groups and/or white papers to identify and articulate shared community objectives*
    - Intellectual property (IP), governance and public-private partnerships.
    - How could/should DivSeek liaise with breeding programs:
        - Pre-breeding strategies: Discovery, demand-driven or both?
        - Impact pathways and impact quantification.
    - How DivSeek could/should affect the way genebanks are managed?
    - Genotyping/sequencing platforms and approaches.
    - Phenotyping methods and approaches.
    - Community-driven (meta)data standards and best practices for big-data sharing & management and systems interoperability:
        - What could be realistic approaches to arrive at such standards?
        - What about 'hackathon'-like events to refine crop/plant ontologies?

3. *Training and capacity-building*
    - Training in popular tools and information platforms resources.
    - Workshops in the effective manipulation and interpretation of high-density genome profiles.
    - Workshops in field/glasshouse-based high-throughput phenotyping approaches.
    - Workshops in IP management.
    - Other topics for workshops could include phenotype description and metadata, etc.

Bretting, Peter

From: Luigi Guarino <luigi.guarino@croptrust.org>
Sent: Tuesday, July 21, 2015 5:35 AM
To: Bretting, Peter
Subject: Re: How do we address the disconnect between genetic and morphological diversity in germplasm collections?

Very relevant for DivSeek, as I say on the blog http://agro.biodiver.se/2015/07/sequence-everything-but-not-only/

Had interesting discussion about DivSeek with Rob Bertram, who dropped by our offices a few days ago for a few hours. He remains to be convinced that it's something the Crop Trust should be involved in, but we're working on him :)

The summer has been ok but it's not over yet! [redacted]

You've had your vacation?

On Tue, Jul 21, 2015 at 11:31 AM, Bretting, Peter <Peter.Bretting@ars.usda.gov> wrote:

Sure, that will do it. I like the concluding paragraph of the paper, which addresses the long term.

Thanks, I might circulate this to the DivSeek Steering Committee.

Hope that your summer has been peaceful and pleasant,

Peter

Peter Bretting

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E-mail peter.bretting@ars.usda.gov

Web site: http://www.ars.usda.gov/research/programs/programs.htm?NP_CODE=301

From: Luigi Guarino [mailto:luigi.guarino@croptrust.org]
Sent: Tuesday, July 21, 2015 5:28 AM
To: Bretting, Peter
Subject: Fwd: How do we address the disconnect between genetic and morphological diversity in germplasm collections?

Answer: Sequence everything :)

http://www.amjbot.org/content/early/2015/07/15/ajb.1500203.full.pdf+html

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Luigi Guarino

Global Crop Diversity Trust
Platz der Vereinten Nationen 7, 53113 Bonn

Germany
New website: www.croptrust.org *Securing Our Food, Forever*

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Luigi Guarino

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New website: www.croptrust.org *Securing Our Food, Forever*

Bretting, Peter

From: Bretting, Peter
Sent: Monday, December 28, 2015 11:09 AM
To: 'Ruth Bastow'
Subject: RE: Assistance with DivSeek Landscape Study

Hi Ruth—apologies for the delayed reply, caused primarily by the holidays. I'll try to insert locations for some of these projects into the spreadsheet.

Best for the holidays and the New Year!

Peter

Peter Bretting
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E-mail peter.bretting@ars.usda.gov
Web site: http://www.ars.usda.gov/research/programs/programs.htm?NP_CODE=301

From: Ruth Bastow [mailto:ruth@globalplantcouncil.org]
Sent: Monday, December 21, 2015 2:04 PM
To: Bretting, Peter <Peter.Bretting@ARS.USDA.GOV>
Subject: Assistance with DivSeek Landscape Study
Importance: High

Dear Peter
I hope this email finds you well.
I am just trying to get a physical location for all the projects we have so far identified in the DivSeek Landscape project.
We are creating an online map version, which I hope to be able to show at the DivSeek on the 8th Jan 2016. So I need a GPS location for the lead organisation in each project

From the websites for the following projects it is not possible to find out the physical location.

GRIN
GRIN Global
Legume Federation
Legume Information System
Maize GDB
PeanutBase
TCAP
Soybase
USDA Pisum Diversity Collection

Would you be able to help me out with this ?
I have also attached the current spreadsheet so you can understand the type of information I am after.

Thanks in advance
Ruth

Bretting, Peter

From: Ruth Bastow <ruth@globalplantcouncil.org>
Sent: Monday, December 21, 2015 2:04 PM
To: Bretting, Peter
Subject: Assistance with DivSeek Landscape Study
Attachments: DivSeek Landscape.xlsx

Importance: High

Dear Peter
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Would you be able to help me out with this ?
I have also attached the current spreadsheet so you can understand the type of information I am after.

Thanks in advance
Ruth

Project
1000 Plant Genomes Project
150 Tomato Genome ReSequencing project
3,000 Rice Genome Project
African Orpahn Crop Consortium
AKER - Improve the competitiveness of sugar beet
AMAIZING
Australian Plant Phenomics Facility (APPF)
BamYIELD
BEAN-ADAPT
Big Data Infrastructure for Crop Genomics

BreedWheat

BRIDGE

Cacao Genome Database
CerealsDB
Conservation and Divergence in the Wild Common Bean (*Phaseolus vulgaris*) Genome
CottonGen
Crop Ontology

Elixir Excelerate

EMPHASIS
EURISCO
EU FruitBreedOMICs - Bridging the gap between genomics and fruit breeding
EU Tree4Future (2012-2016)

Genesys
Genome Database for Rosaceae
Genomes To Fields (G2F)
Genomic Standards Consortium's Biodiversity Working Group
Geospatial database of collected crop samples and repository of expedition fieldbooks

Germinate
Global Information System (GLIS) of the ITPGRFA
GrainGenes
Gramene
GRIN
GRIN-Global
iPlant Collaborative
IRIC
KBase
Legume Federation

Legume Information System

Maize GDB

NEXTGEN Cassava

PeanutBase

PEAMUST - Pea Multi-Stress adaptation and biological regulations for yield improvement and stability

Phenomics Ontology Driven Data (PODD)

Planteome

PLantGenIE

PlantPhenomeNET/Plant Phenomics Working Group

RAPSODYN - Optimisation of the RAPeSeed Oil content anD Yield under low Nitrogen input

Seeds of Discovery (SeeD)

Seeds4needs

Smart tools for Prediction (and) Improvement of Crop Yield (SPICY)
SoyBase
SUNRISE - develop the economic competitiveness of the sunflower crop, an environmentally friendly agronomic solution in the context of climate and agricultural practices changes

The 3000 Chickpea Genome Sequencing Initiative
The Biology of Rare Alleles in Maize and Its Wild Relatives (Panzea)
The CGIAR Research Program on Roots, Tubers and Bananas (RTB)

The European Plant Phenotyping Network (EPPN)
The Genomic and Open-source Breeding Informatics Initiative (GOBII)
The International Cocoa Germplasm Database (ICGD)
The International Plant Phenotyping Network (IPPN)
The Rice Diversity Project
TransPlant

Triticeae CAP (TCAP)
UK Barley Genome Sequencing
USDA Pisum Diversity collection
W3B-PR-29-Indonesia, "Multicountry construction of a test platform for the development and allocation of globally unique identifiers for rice germplasm, linking the MLS information infrastructure and the DivSeek repository
WHEALBI - Wheat and barley Legacy for Breeding Improvement
Wheat Initiative
WISP

In situ conservation and use of crop wild relatives in three ACP countries of the SADC region
Data recording of coconut germplasm from CRI collection in the International Coconut Genetic Resources Database (CGRD

G2P-SOL
REMBRANDT

Mission/Aims/Goals
The 1000 plants (oneKP or 1KP) initiative is an international multi-disciplinary consortium that has generated large-scale gene sequencing data for over 1000 species of plants.
The aim of the 150 Tomato Genome ReSequencing project is to reveal and explore the genetic variation available in tomato.
The 3,000 Rice Genomes Project (3K RGP) is a collaborative, international research program that has sequenced 3,024 rice varieties from 89 countries.
The consortium's goal is to sequence, assemble and annotate the genomes of 100 traditional African food crops, which will enable higher nutritional content for society over the decades to come.

The AKER programme will first expand the genetic variability of sugar beet by providing a collection of genes from resources around the world.
AMAIZING is designed to support the competitiveness of the French maize breeding sector as well as to meet society demand for sustainability and quality.

The APPF is a national facility, available to Australian and international plant scientists. The APPF is based around automated image analysis of the phenotypic characteristics of extensive germplasm collections and large breeding, mapping and mutant populations. It exploits recent advances in robotics, imaging and computing to enable sensitive, high throughput analyses to be made of plant growth and function.
BamYIELD is a multidisciplinary research programme for underutilised legumes using Bambara groundnut as an exemplar species.

This project seeks to understand the genetic architecture of adaptation of the common bean (*Phaseolus vulgaris* ; *Pv*) and its cross-compatible sister species, the runner bean (*Phaseolus coccineus* ; *Pc*), in their centers of origin in the Americas and following their dispersal to Europe, as a model for future major environmental and socio-economic changes, such as increases in temperature, variability in rainfall, and new consumer preferences. W

Develop a crop bioinformatics platform which enables users to access this genetic and phenotypic variation and perform analyses to explore gene expression and associations between genetic variation

Aims at strengthening the competitiveness of the French wheat breeding sector as well as to address the societal demand for sustainability, quality, and safety in agricultural production.

Aims at evolving the Federal ex situ Genebank of IPK Gatersleben from a 'storage facility' of genetic resources to an integrated resource and information centre, representing a one stop shop for facilitated and informed utilization of crop plant biodiversity.

The Genomics, Genetics and Breeding Resource for Cacao Improvement

Provides a range of online resources for the study of the wheat genome

http://www.reeis.usda.gov/web/crisprojectpages/1000929-conservation-and-divergence-in-the-common-bean-phaseolus-vulgaris-genome-during-domestication-assessed-by-next-generation-sequencing.html

Cotton community genomics, genetics and breeding database being developed to enable basic, translational and applied research in cotton

CO has two primary objectives for the Integrated Breeding Platform: (1) Publish online fully documented lists of breeding traits used by the Breeding Management System (BMS) for producing standard fieldbooks and (2) Support data analysis and integration of genetic and phenotypic data through harmonized breeders' data annotation. The project also offers a forum for scientists to discuss their variables, methods and scales of measurement, and fieldbooks.

EXCELERATE funding will help ELIXIR coordinate and extend national and international data resources to ensure the delivery of world-leading life-science data services. It will support a pan-European training programme, anchored in national infrastructures, to increase bioinformatics capacity and competency. It will also provide efficiencies in management and operation throughout the infrastructure, which is distributed amongst 17 countries.

EMPHASIS is a European infrastructure projects which aims at develop and provide access to infrastructures addressing multi-scale phenotyping for analysing genotype performance under diverse environmental conditions and quantify the diversity of traits contributing to performance in diverse environmental scenario (i.e. plant architecture, major physiological functions and output, yield components and quality). Specifically EMPHASIS will address the technological and organizational limits of European Phenotyping, for a full exploitation of genetic and genomic resources available for crop improvement in changing climate.

EURISCO is a search catalogue providing information about *ex situ* plant collections maintained in Europe. It is based on a European network of *ex situ* National Inventories (NIs). Currently, EURISCO comprises passport data about 1.1 million samples.

The objective of FRUITBREEDOMICS is to improve the efficiency of fruit breeding (apple and peach but many tools will also benefit to other species of the Rosaceae family) by bridging the gap between scientific genetics research and application in breeding.

Trees4Future is an Integrative European Research Infrastructure project that aims to integrate, develop and improve major forest genetics and forestry research infrastructures. It will provide the wider European forestry research community with easy and comprehensive access to currently scattered sources of information (including genetic databanks, forest modelling tools and wood technology labs)

Genesys is a global portal to information about Plant Genetic Resources for Food and Agriculture (PGRFA). It is a gateway from which germplasm accessions from genebanks around the world can be easily found and ordered.

A curated and integrated web-based relational database providing centralized access to Rosaceae genomics, genetics and breeding data and analysis tools to facilitate basic, translational and applied Rosaceae research.

A public research initiative to enable trait prediction from genotype and environment, thereby leading to increased maize production

International community is to promote mechanisms that standardize the description of genomes and the exchange and integration of genomic data.

Access to original passport data of more than 220,000 samples collected around the world during Bioversity International* supported missions.

Germinate is a generic plant genetic resources database and offers facilities to store both standard collection information and passport data along with more advanced data types such as phenotypic, genotypic and field trial data.
A global information system to facilitate the exchange of information, based on existing information systems, on scientific, technical and environmental matters related to plant genetic resources for food and agriculture

GrainGenes, a database for Triticeae and Avena, is a comprehensive resource for molecular and phenotypic information for wheat, barley, rye, and other related species, including oat.

Gramene is a curated, open-source, integrated data resource for comparative functional genomics in crops and model plant species.

The Germplasm Resources Information Network (GRIN) web server provides germplasm information about plants, animals, microbes and invertebrates. This program is within the U.S. Department of Agriculture's Agricultural Research Service.
The GRIN-Global project's mission is to create a new scalable, version of the Germplasm Resource Information Network (GRIN), used by the USDA/ARS National Plant Germplasm System. The GRIN-Global database platform will be suitable for use by any interested genebank in the world.
The iPlant Collaborative is where scientists in all domains of life sciences can connect to public datasets, manage and store their own data and experiments, access high-performance computing, and share results with colleagues.

Aims to provide access to well organized information about rice, and to facilitate communication and collaboration for rice community, having germplasm diversity as a focal entry point.
KBase is an open platform for comparative functional genomics and systems biology for microbes, plants and their communities, and for sharing results and methods with other scientists.

Aims to build a federation of legume databases through data standards, distributed development and comparative analysis, to support research across the legume family, and to support robust agriculture for a world that is significantly "legume-fed".

A collaborative, community resource to facilitate crop improvement by integrating genetic, genomic, and trait data across legume species.

Maintains and delivers genome sequences, maps, genotypes, and other genomic information for maize.

Aaims to significantly increase the rate of genetic improvement in cassava breeding and unlock the full potential of cassava, a staple crop central to food security and livelihoods across Africa. The project will implement and empirically test a new breeding method known as Genomic Selection that relies on statistical modeling to predict cassava performance before field-testing, and dramatically accelerates the breeding cycle.

A collaborative, community resource to facilitate crop improvement by integrating genetic, genomic, and trait data for peanuts to accelerate genetic improvement.

The project will provide innovative solutions for genomic assisted selection, thanks to the production of new tools and innovative results such as the cloning of resistance genes, better understanding of the impact of the interactions between plant architecture, symbionts and stress tolerance, and the identification of regions of the genome involved in yield stability.

The PODD project will deliver a data management service that can handle multiple phenotyping platforms and data formats (text, image, video). The project will also provide the ability to manage a repository of associated metadata based on standard ontologies. A range of tools and other features will be developed to provide Web-based discovery interfaces for users, external repositories, and services and support for the automatic capture and annotation of data and metadata from instrumentation, when possible.

The goals of the Planteome Project are to provide researchers and agricultural breeding programs a common semantic framework and a focused set of comparative analysis tools to leverage the scientific value of the ever-expanding array of sequenced plant genomes and phenotype data.

The Plant Genome Integrative Explorer is a collection of interoperable web resources for searching, visualizing and analyzing genomics and transcriptomics data for different plant species. Currently it includes dedicated web portals for enabling in-depth exploration of poplar, Norway spruce, and Arabidopsis.

PhenomeNET is a cross-species phenotype network of phenotypic similarity The use of ontologies, annotation standards, shared formats, and best practices for cross-taxon phenotype data analyses represents a novel approach to plant phenomics that enhances the utility of model genetic organisms and can be readily applied to species with fewer genetic resources and less well-characterized genomes.

Improving breeding of adapted varieties using genetics and genomics. Improving oil yield per hectare and NUE are the main final targets of RAPSODYN, along with a better understanding of both hybrid value and genotype x N interaction.

The Seeds of Discovery (SeeD) project strives to invigorating maize and wheat genebanks to make them more attractive to breeders. We want to "see into seeds" (hence the SeeD acronym) to unlock the dormant genetic potential of maize and wheat genetic resources by providing breeders with a toolkit that enables their more targeted use in the development of high-yielding, climate-ready and resource-efficient
Seeds for Needs' initiative works with >20,000 smallholder farmers in 11 countries to research how agricultural biodiversity can minimize the risks associated with climate change.

To develop a suite of tools based on molecular breeding to help breeders in predicting phenotypic response of genotypes for complex traits like yield under a range of environmental conditions.

Maintains and delivers genome sequences, maps, genotypes, and other genomic information for soybeans.

SUNRISE offers unique opportunities to accelerate the implementation of the genomic prediction of ideotypes. SUNRISE will combine this approach with the improvement of the sunflower hybrid breeding process: it aims to identify the loci which are the most involved in homeostasis, depending on the parental alleles, and then build new gene pools exhibiting between themselves the better specific combining ability for homeostasis, i.e. yield stability.

An initiative to sequence the global chickpea collection to identify superior alleles and use them in breeding program for chickpea improvement.

Investigating the connection between phenotype and genotype of complex traits in maize and its wild relative, teosinte

Joint initiative of CGIAR and partners to address Global challenges roots, tubers, and bananas. Among many other activities, it promotes the re-sequencing and high-troughput genotyping at large scale of genetic resources held in genebanks and breeding materials as well as the development and interoperability of the underlying informatics infrastucture

EU funded project with the goal to create structural and functional synergies between the leading plant phenotyping institutions in Europe. The project includes three pillars related to i) transnational access of the diverse user community to the existing European plant phenotyping facilities, ii) dedicated networking activities to provide a link between phenotyping experts, user communities and technology developers, iii) joint research activities to develop and adapt novel sensors and establish experimental as well as IT standards for application in plant phenotyping.

Aims to streamline the breeding of five staple crops – wheat, rice, maize, sorghum and chickpea via the development of modular, open-source breeding software resources
An information service for the cocoa research community.

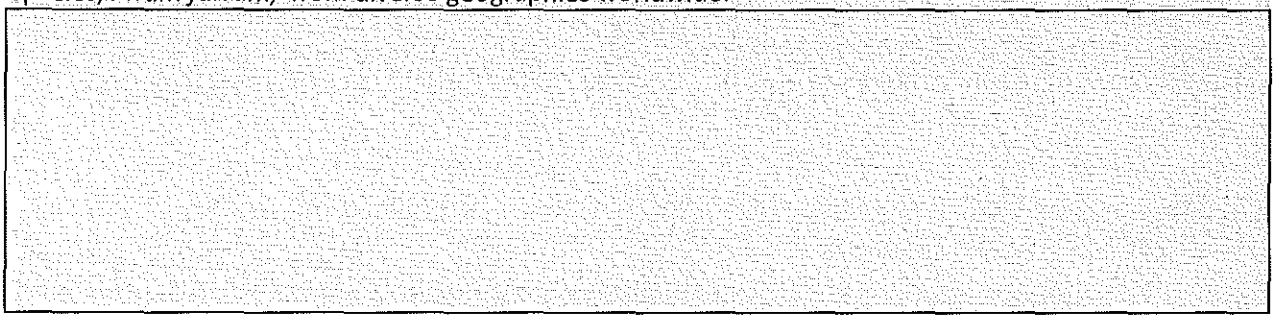
The International Plant Phenotyping Network (IPPN) is a non-profit association with large phenotyping hubs across the globe as members. The overarching goal is to increase the visibility and impact of plant phenotyping and to use existing synergies by enabling communication and cooperation within the plant phenotyping community, from academia, industry, policy and general public.
Collaborative effort to explore the genetic basis of variation in rice and its wild ancestors.

A European-Union funded e-infrstructure to support computational analysis of genomic data from crop and model plants.

USDA's National Institute of Food and Agriculture (NIFA) awarded $25 million to develop new varieties of wheat and barley.

The UK Barley Genome Sequencing Consortium is part of a global effort to produce more resilient and higher yielding varieties of this important crop, resistant to pests and diseases.

The USDA *Pisum* Diversity Collection, UPDC, is a unique resource that represents the breadth of the genetic diversity of the genus in an inbred format that facilitates genetic study. The UPDC includes inbred accessions from the refined pea core collection, parent lines of USDA recombinant inbred (RIL) populations, accessions from U.S. pea breeding programs, *Pisum sativum* subspecies, and the wild species, *Pisum fulvum,* from diverse geographies worldwide.



WHEALBI will develop and implement tools, methods and procedures to facilitate the characterisation of wild relatives and local varieties of wheat and barley as sources of genes for use in crop improvement.

Exome capture and phenotyping

Provides a framework to establish strategic research and organisation priorities for wheat research at the international level in both developed and developing countries.
The WISP consortium is a BBSRC funded collaborative programme for wheat improvement, which brings together experts from five UK institutions: John Innes Centre, National Institute for Agricultural Botany, University of Nottingham, University of Bristol and Rothamsted Research.

To develop National Strategic Action Plans (NSAP) for the in situ conservation of crop wild relatives (CWR) in Mauritius, South Africa and Zambia, as a means of underpinning regional food security and mitigating the adverse effects of climate change.

Complete the characterization data of the coconut accessions conserved by the Sri Lanka Coconut Genebank and test new methodology to measure innovative criteria linked to the nutrition and quality of coconut fruit (sugar and fatty acid profiles)

Weblink	Location
https://sites.google.com/a/ualberta.ca/onekp/	University of Alberta Edmonton Canada 53.525656, -113.529382
http://www.tomatogenome.net/	Droevendaalsesteeg 4, 6708 PB Wageningen 51.987359, 5.666493
http://gigadb.org/dataset/200001	Pili Drive, UPLB, Los Baños, 4031 Laguna, Philippines 14.168096, 121.254601
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http://www.plantphenomics.org.au/	CSIRO Plant Industry Canberra ACT 2601 Australia -35.271943, 149.114894
www.bambaraground nut.org	Crops For the Future Jalan Broga, 43500 Semenyih Selangor Darul Ehsan, Malaysia 2.946446, 101.873944
http://www.eracaps.org/joint-calls/era-caps-funded-projects/era-caps-second-call-2014/evolution-changing-environment	?????
Not yet available	TGAC?

http://www.breedwheat.fr/	UMR INRA-UBP 1095: Genetics, Diversity and Ecophysiology of Cereals (GDEC) 5, chemin de Beaulieu, 63039 Clermont-Ferrand Cedex 2 France 45.775388, 3.142593
http://bridge.ipk-gatersleben.de/	IPK Gatersleben, Germany 51.826067, 11.277263
http://www.cacaogenomedb.org/	Agricultural Sustainability Institute at UC Davis One Shields Avenue Davis, CA 95616 38.538266, -121.761734
http://www.cerealsdb.uk.net/cerealgenomics/CerealsDB/indexNEW.php	Bristol Life Sciences Building, University of Bristol, 24 Tyndall Ave, Bristol BS8 1TH 51.459381, -2.600943
http://www.plantsciences.ucdavis.edu/gepts/geptslab.htm	UC Davis One Shields Avenue Davis, CA 95616 38.538266, -121.761734
https://www.cottongen.org	Department of Horticulture, Washington State University, Pullman, WA 99164-6414, USA 46.731412, -117.155007
www.cropontology.org	Bioversity International Parc Scientifique Agropolis II, 34397 Montpellier Cedex 5, France 43.652480, 3.860986

https://www.elixir-europe.org/excelerate	ELIXIR, Wellcome Trust Genome Campus, Hinxton, Cambridgeshire, CB10 1SD, UK 52.080270, 0.186327

http://www.plant-phenotyping.org/emphasis	?????
http://eurisco.ipk-gatersleben.de/	IPK Gatersleben, Germany 51.826067, 11.277263
http://www.fruitbreedomics.com/	?????
http://www.trees4future.eu/	INRA-Orleans 47.828702, 1.914033

https://www.genesys-pgr.org/welcome	The Crop Trust Platz Der Vereinten Nationen 7 53113 Bonn, Germany 50.720371, 7.123108
http://www.rosaceae.org/	Department of Horticulture, Washington State University, Pullman, WA 99164-6414, USA 46.731412, -117.155007
http://www.genomes2fields.org/	Iowa State University Ames, IA 42.026317, -93.644784
http://gensc.org/	?????
http://bioversity.github.io/geosite/	Via dei Tre Denari, 472/a 00057 Maccarese (Fiumicino), Italy 41.878537, 12.237448

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http://wheat.pw.usda.gov/GG3/	USDA ARS WRRC, 800 Buchanan Street, Albany, CA 94710.1105 37.887973, -122.304852
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http://www.iplantcollaborative.org/	Texas Advanced Computing Center Research Office Complex 1.101 J.J. Pickle Research Campus, Building 196 10100 Burnet Road (R8700) Austin, Texas 78758-4497 30.387668, -97.728231
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http://legumefederation.org/	?????

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http://legumeinfo.org/	
http://www.maizegdb.org/	?????
http://www.nextgencassava.org/about.html	Boyce Thompson Institute Ithaca, NY 14850, USA 42.447208, -76.467662
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http://www.planteome.org/	OSU SW Orchard Ave Corvallis, OR 97330, USA 44.567744, -123.280917

http://plantgenie.org/	Umeå Plant Science Centre, Department of Plant Physiology, Umeå University, Umeå, Sweden 63.818313, 20.311391
http://phenomebrowser.net/plant/	??????
http://www.rapsodyn.fr/en/	AGROCAMPUS OUEST 65 Rue de Saint-Brieuc, 35000 Rennes, France 48.113573, -1.706275
http://seedsofdiscovery.org/en/	CIMMYT
http://www.bioversityinternational.org/seeds-for-needs/	CATIE 7170 Turrialba Costa Rica 9.896196, -83.658053

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Not yet available	ICRISAT Patancheru 502324 Telangana, India 17.511395, 78.275248
http://www.panzea.org/	Cornell University 175 Biotechnology Building Ithaca, NY 14853
http://www.rtb.cgiar.org/	Ask Elizabeth

http://www.plant-phenotyping-network.eu/eppn/home	Plant Sciences Forschungszentrum Jülich 52425 Jülich DivSeek Landscape study
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http://www.barleygenome.org.uk/	James Hutton Institute
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http://www.whealbi.eu/	INRA Clermont-Theix, Génétique Diversité et Ecophysiologie des Céréales 194 Avenue du Brézet 63100 Clermont-Ferrand, France 45.777141, 3.142340
http://www.wheatinitiative.org/	INRA 147 rue de l'Université 75 338 Paris cedex 07 - France 48.861305, 2.306281
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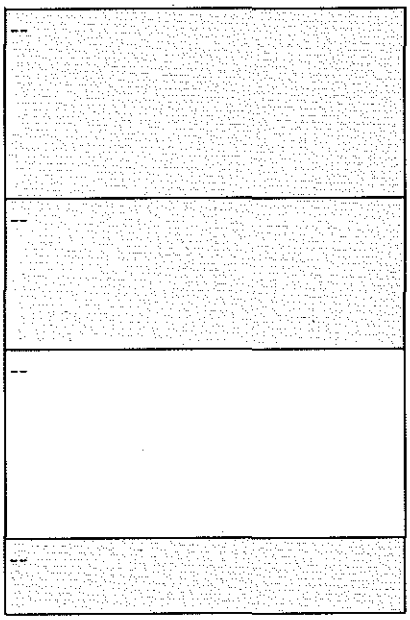

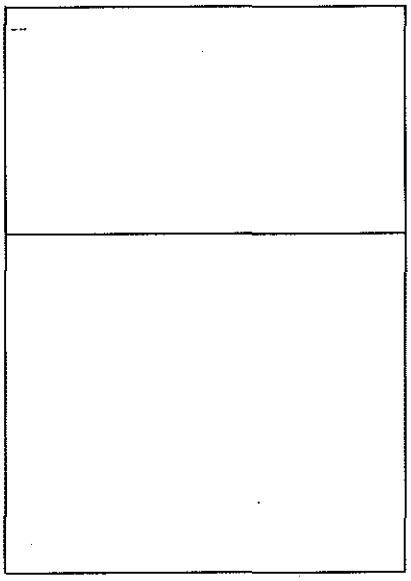

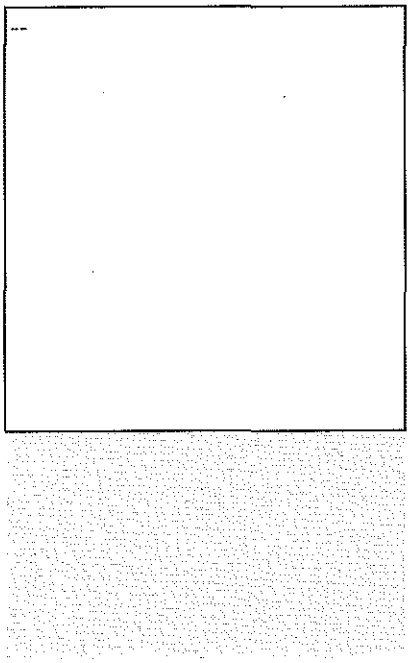

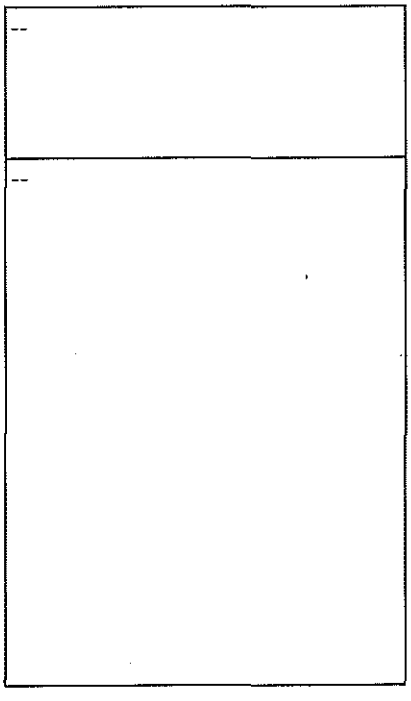

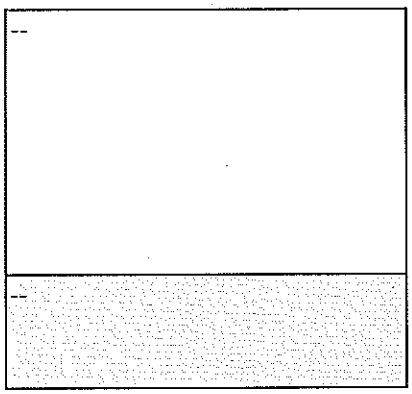

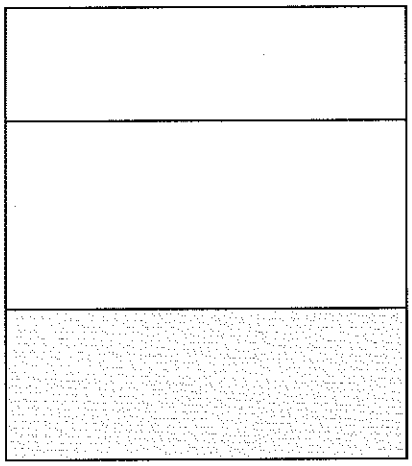

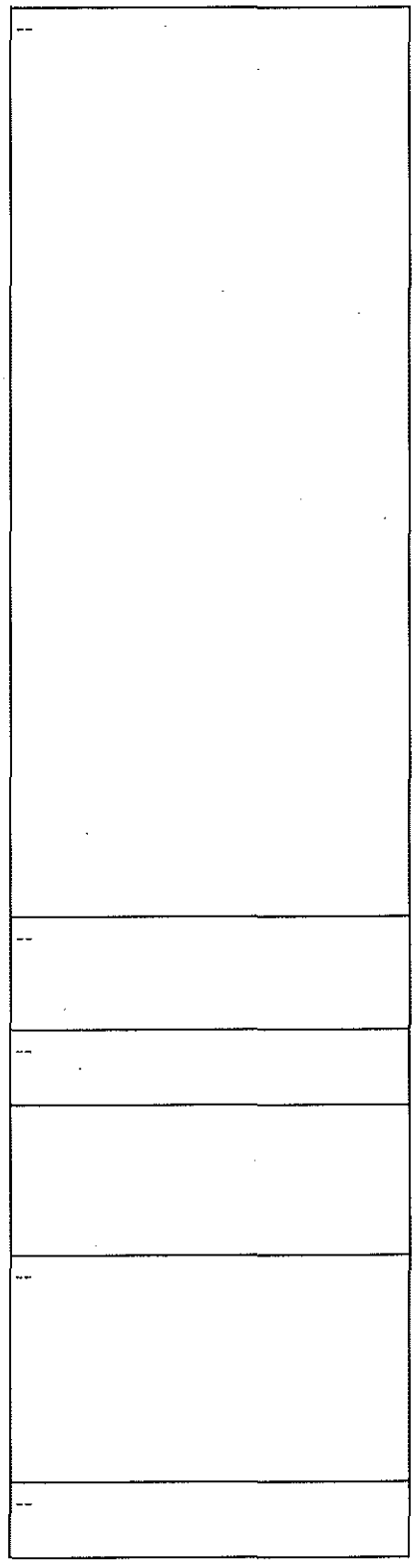

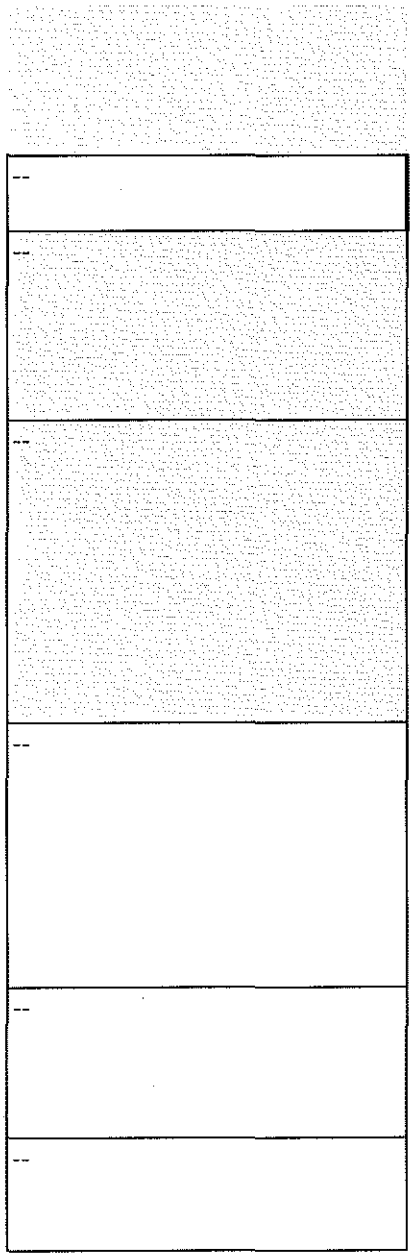

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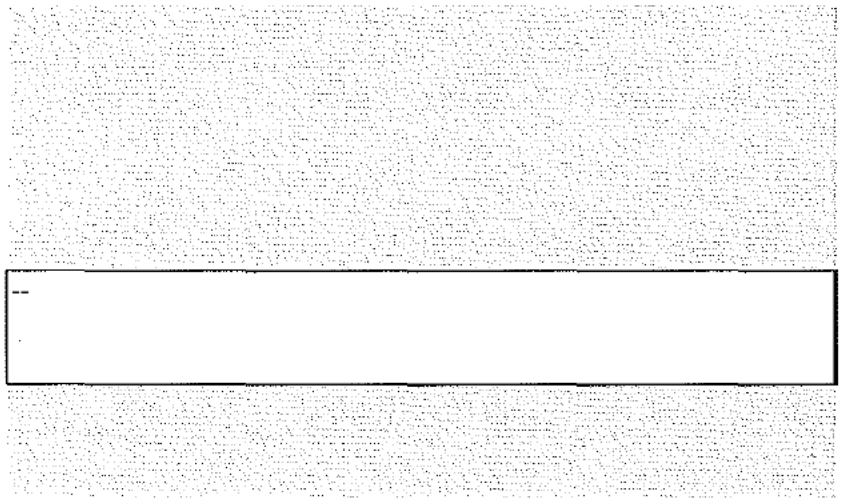

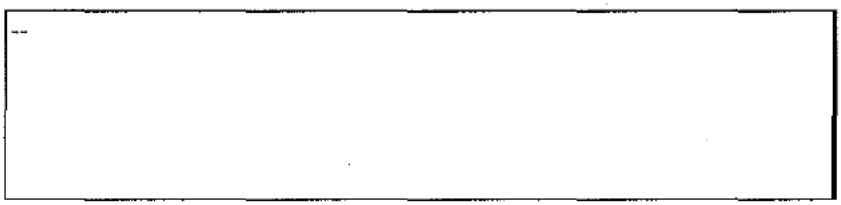

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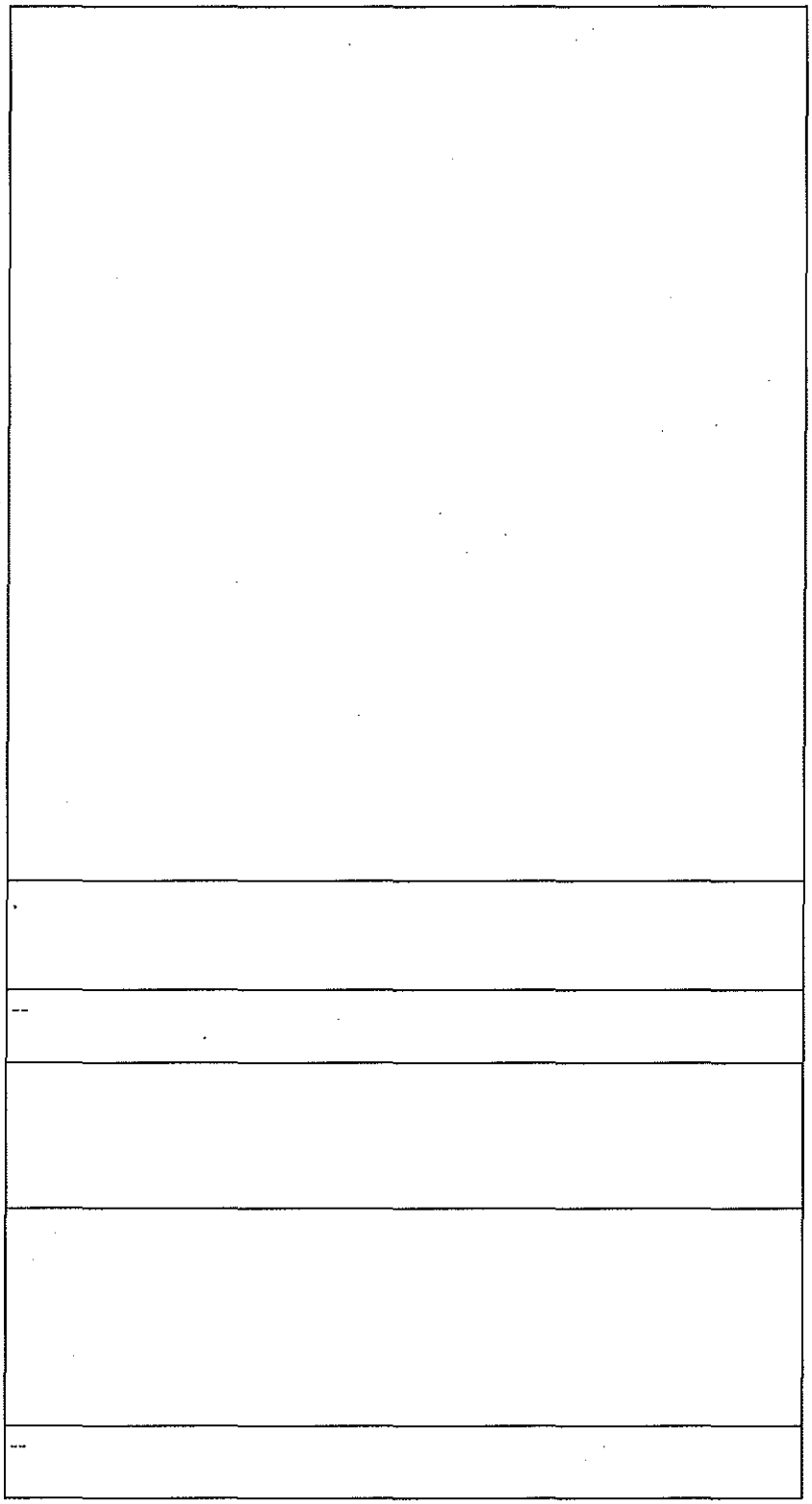

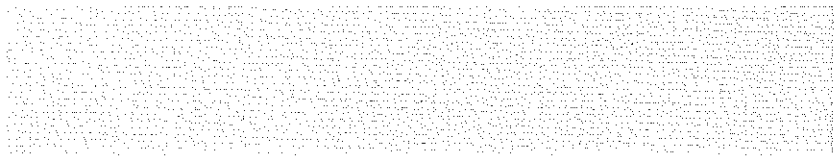

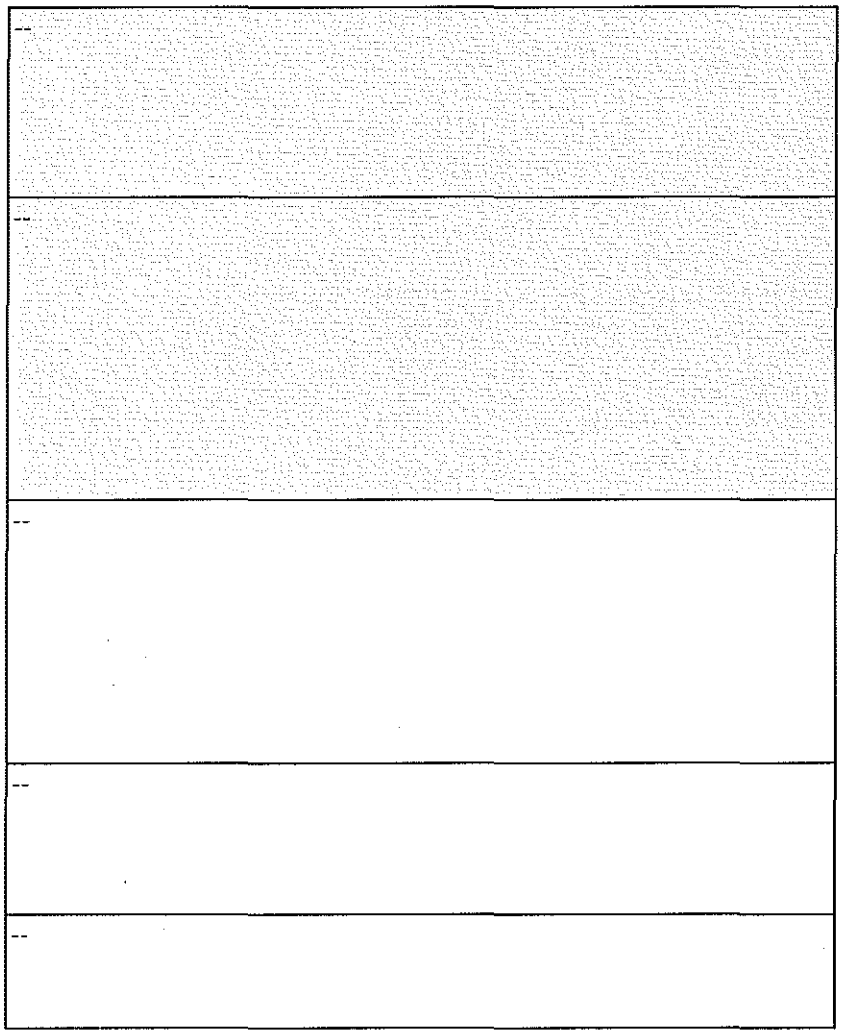

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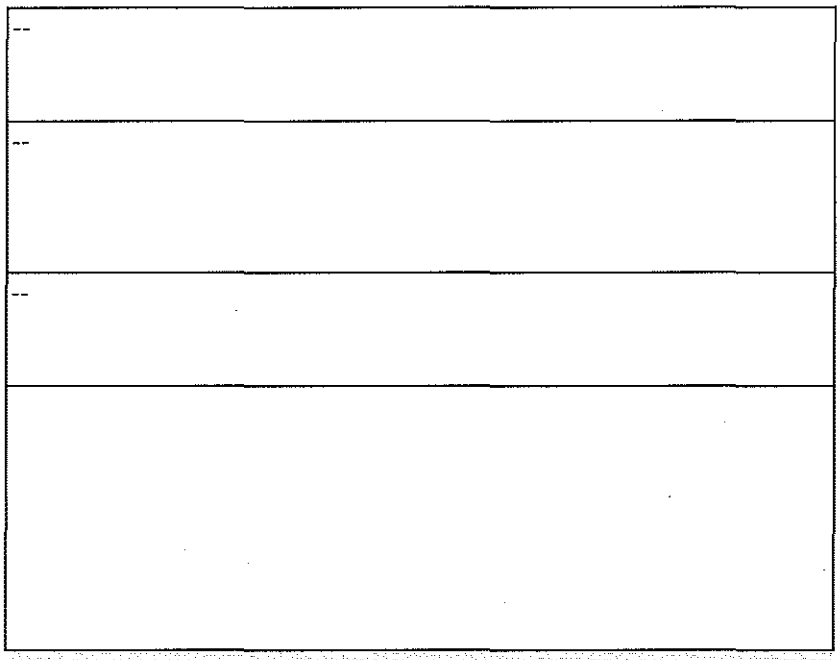

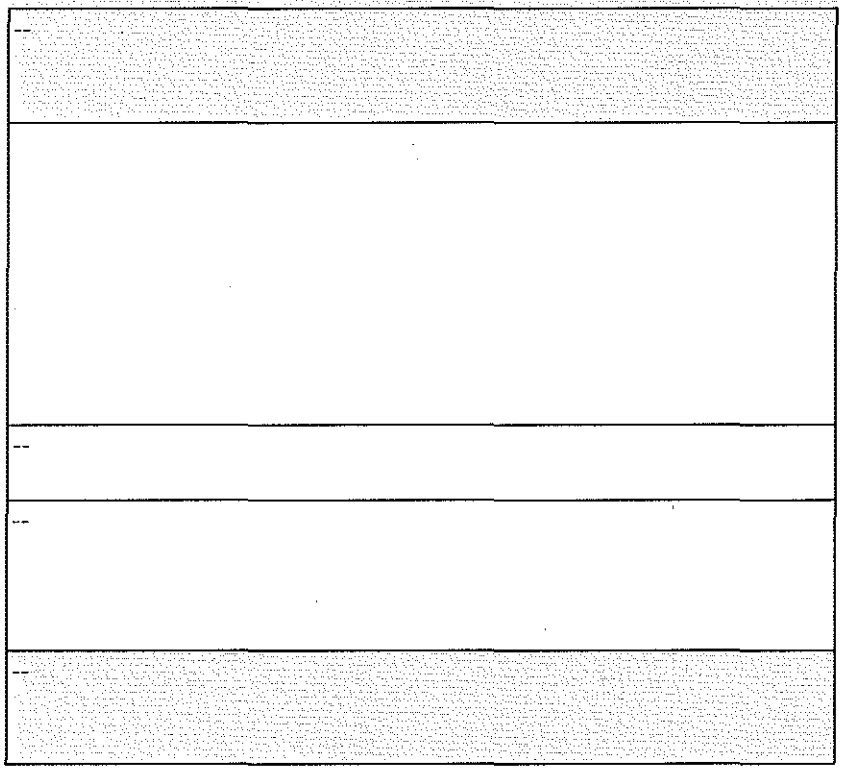

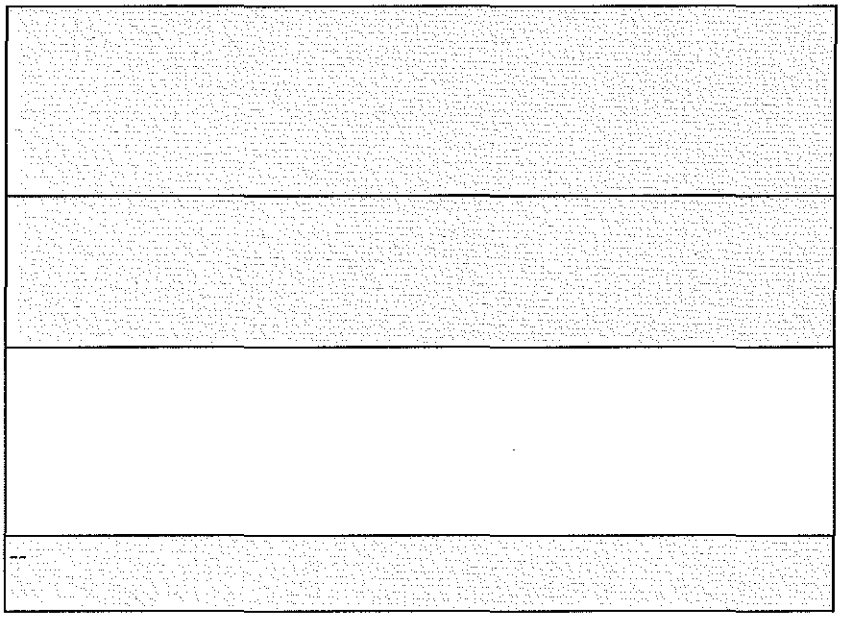

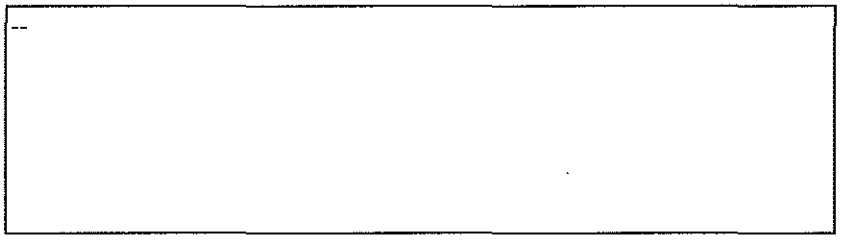

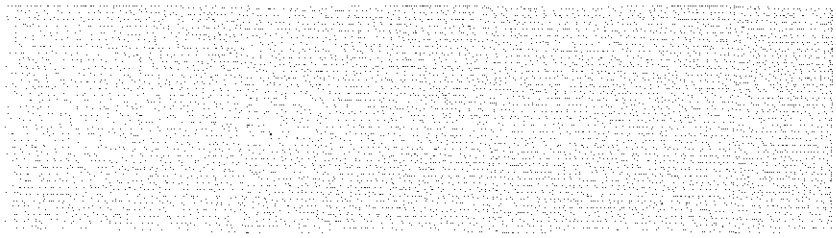

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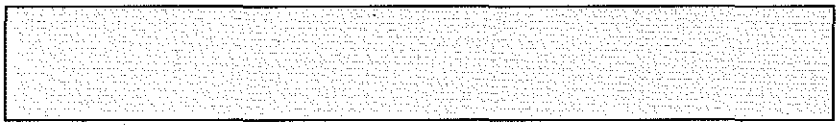

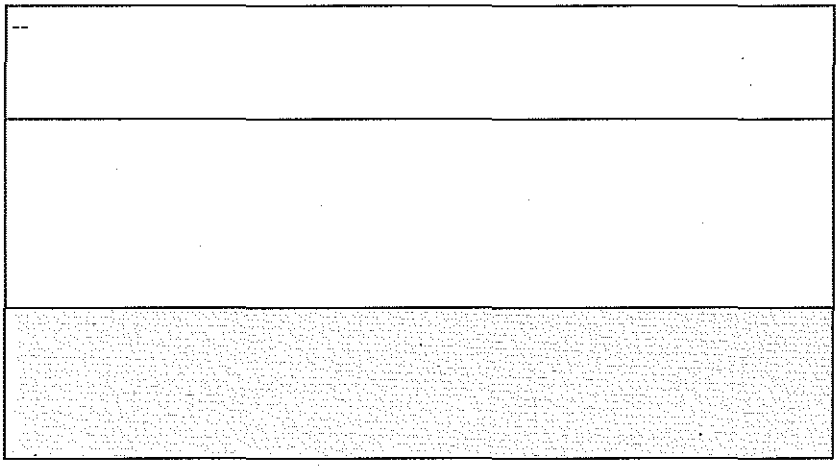

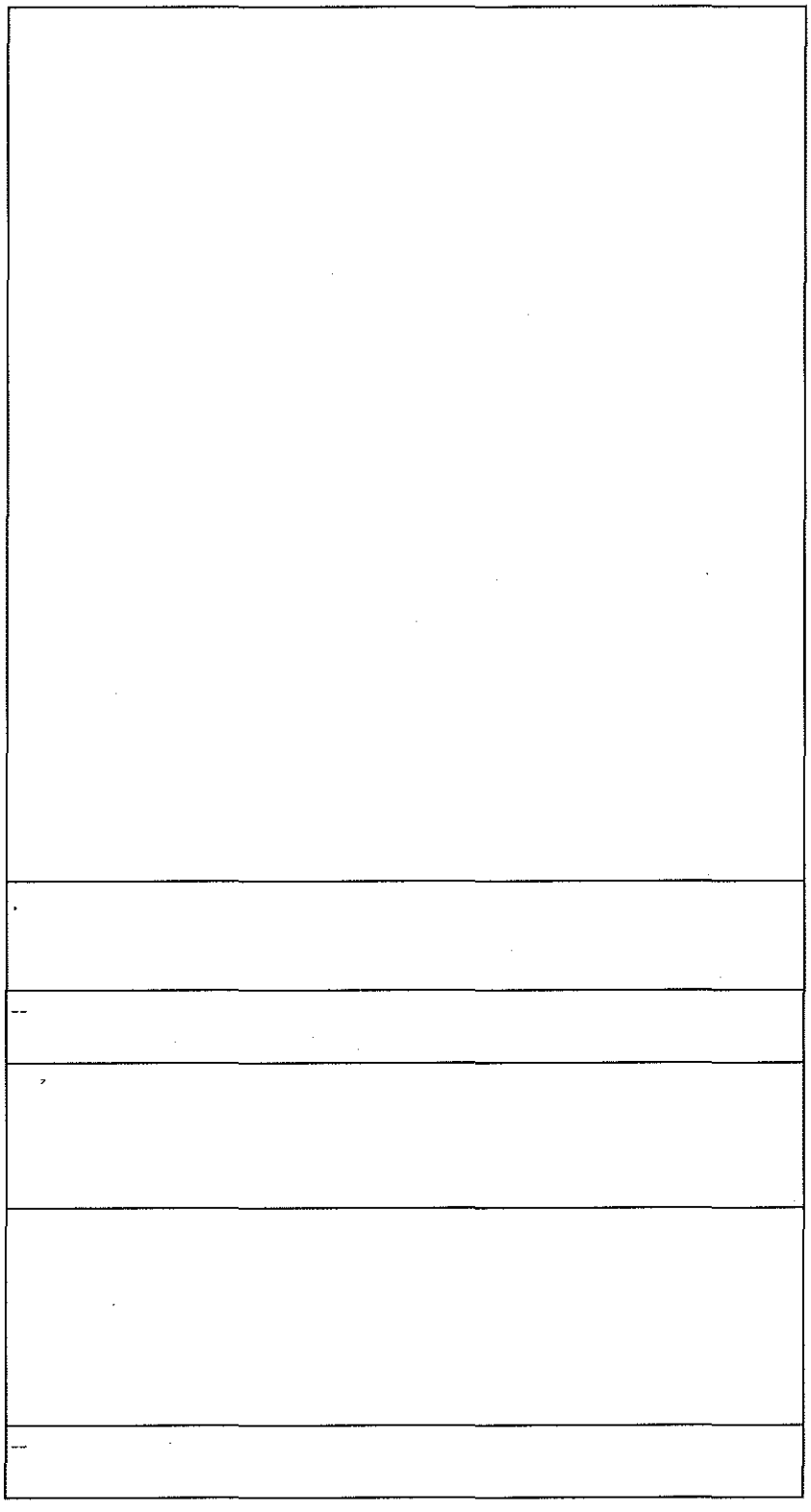

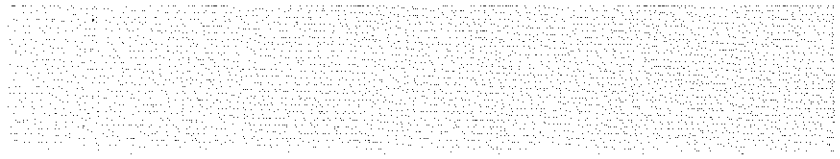

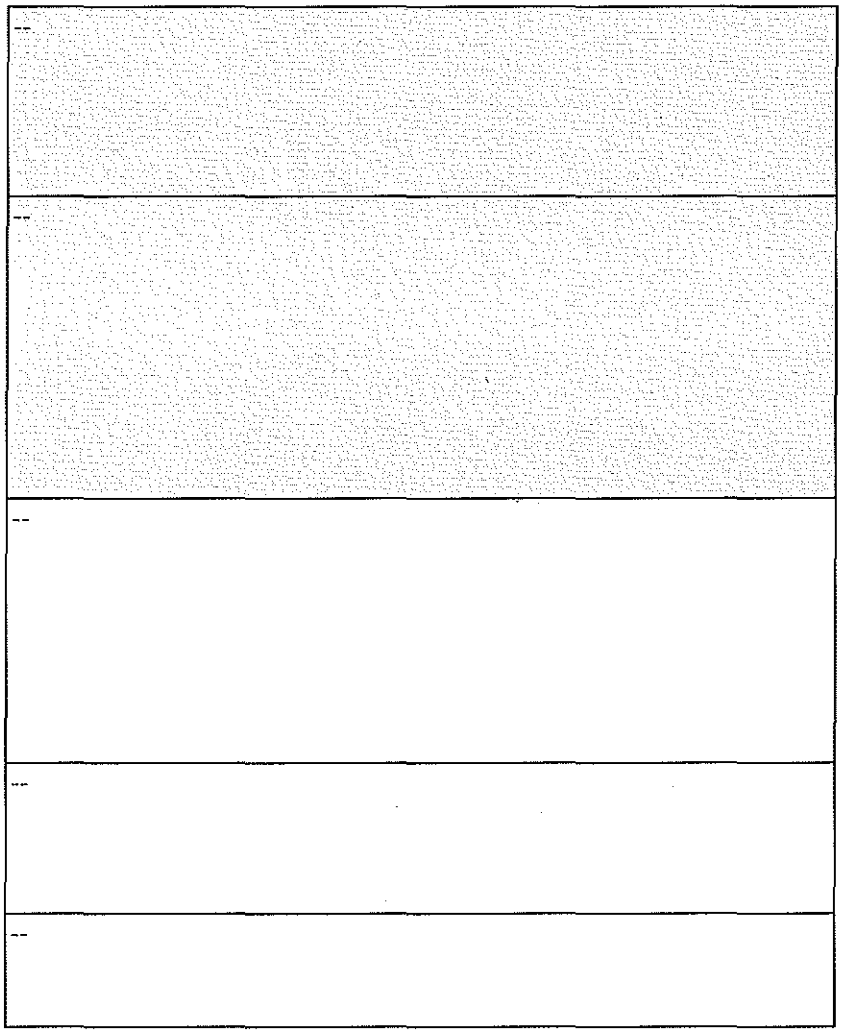

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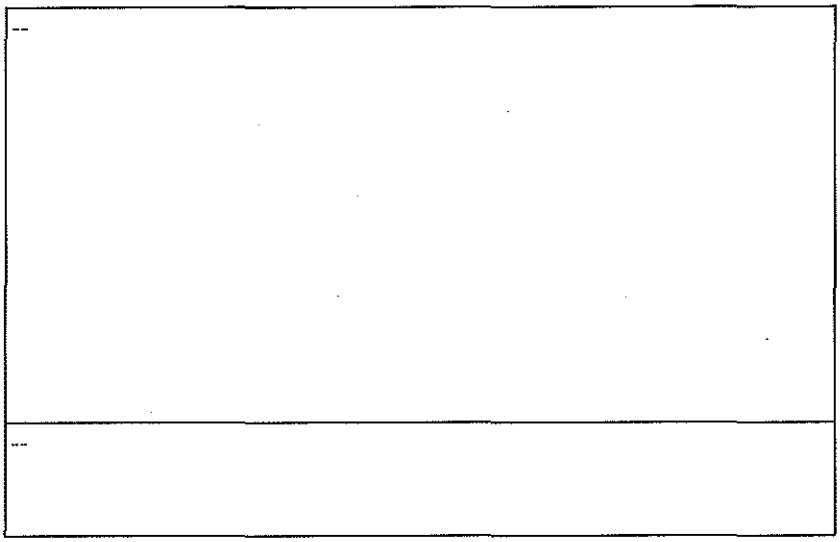

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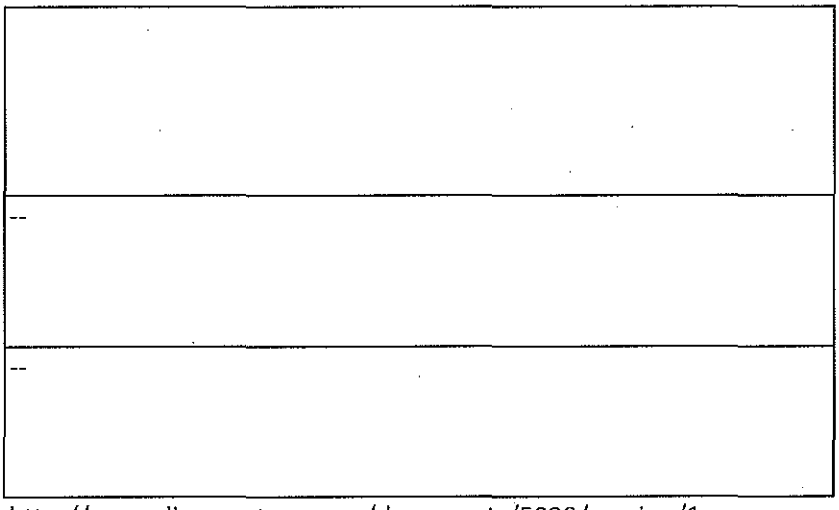

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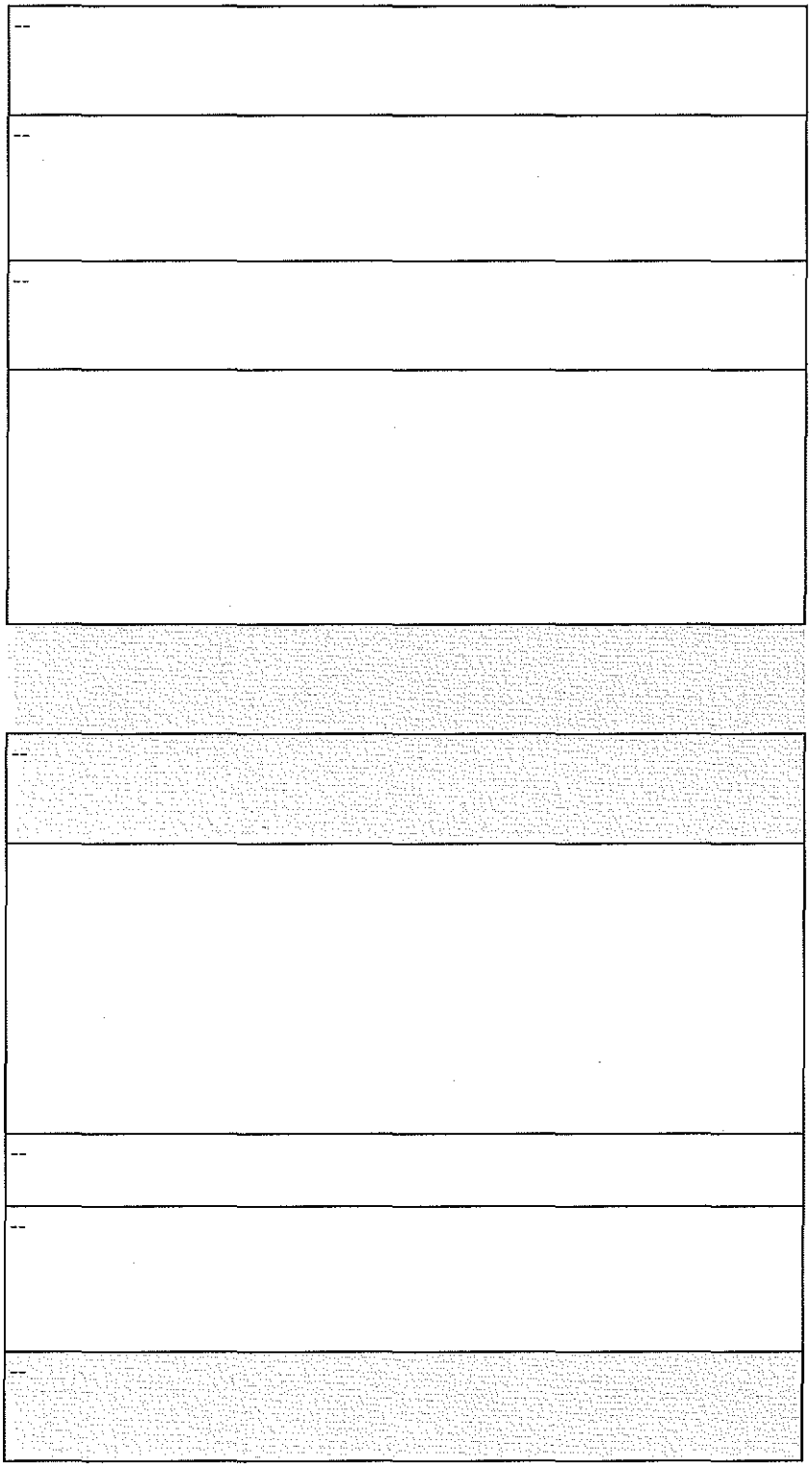

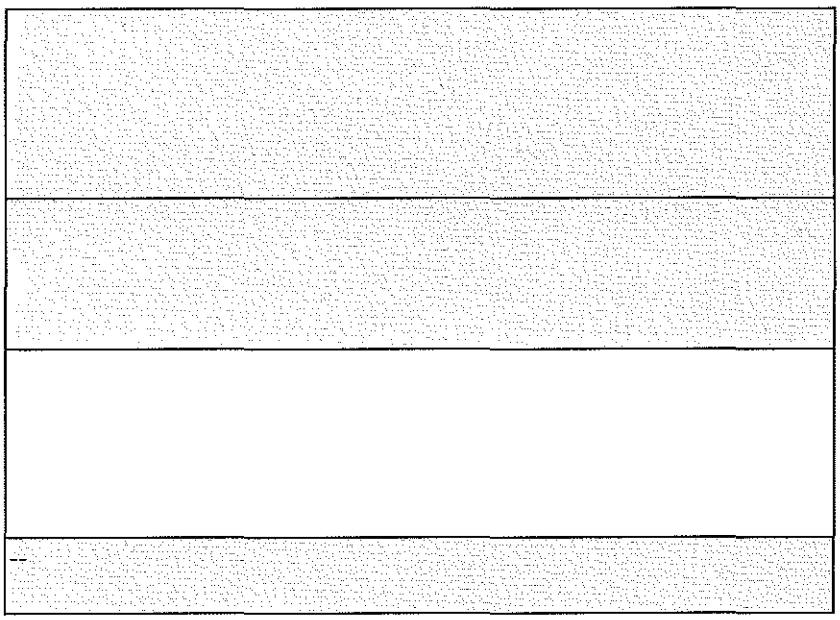

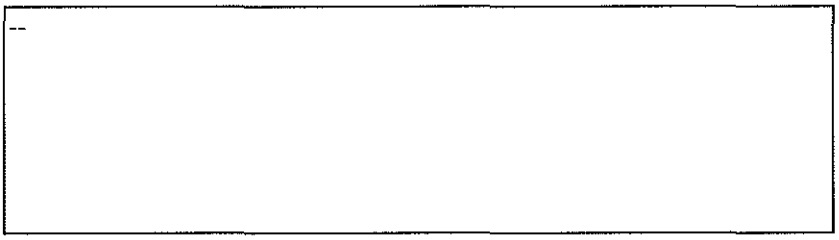

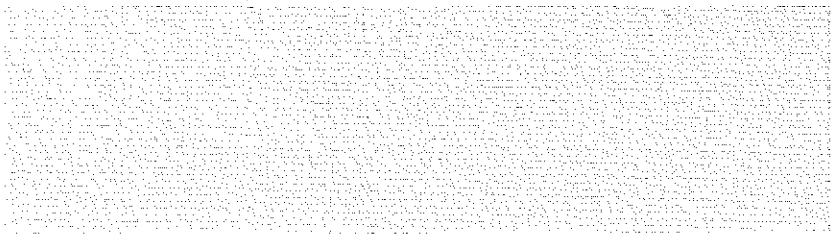

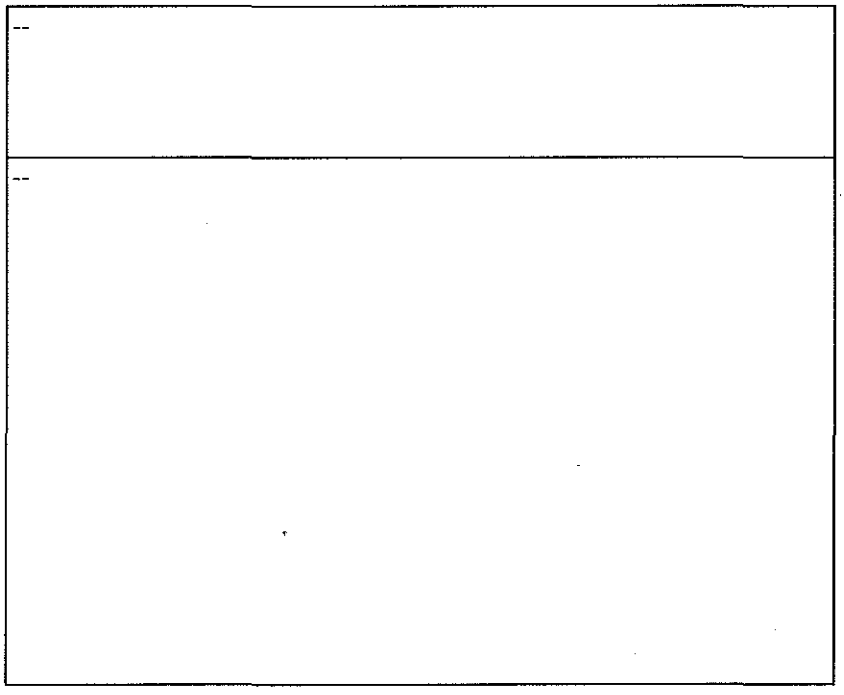

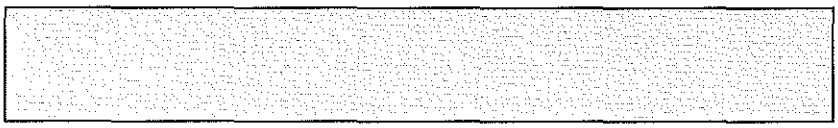

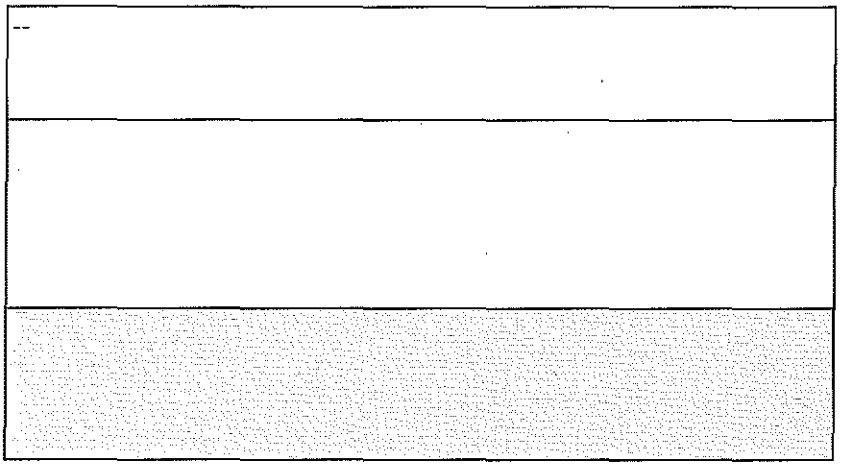

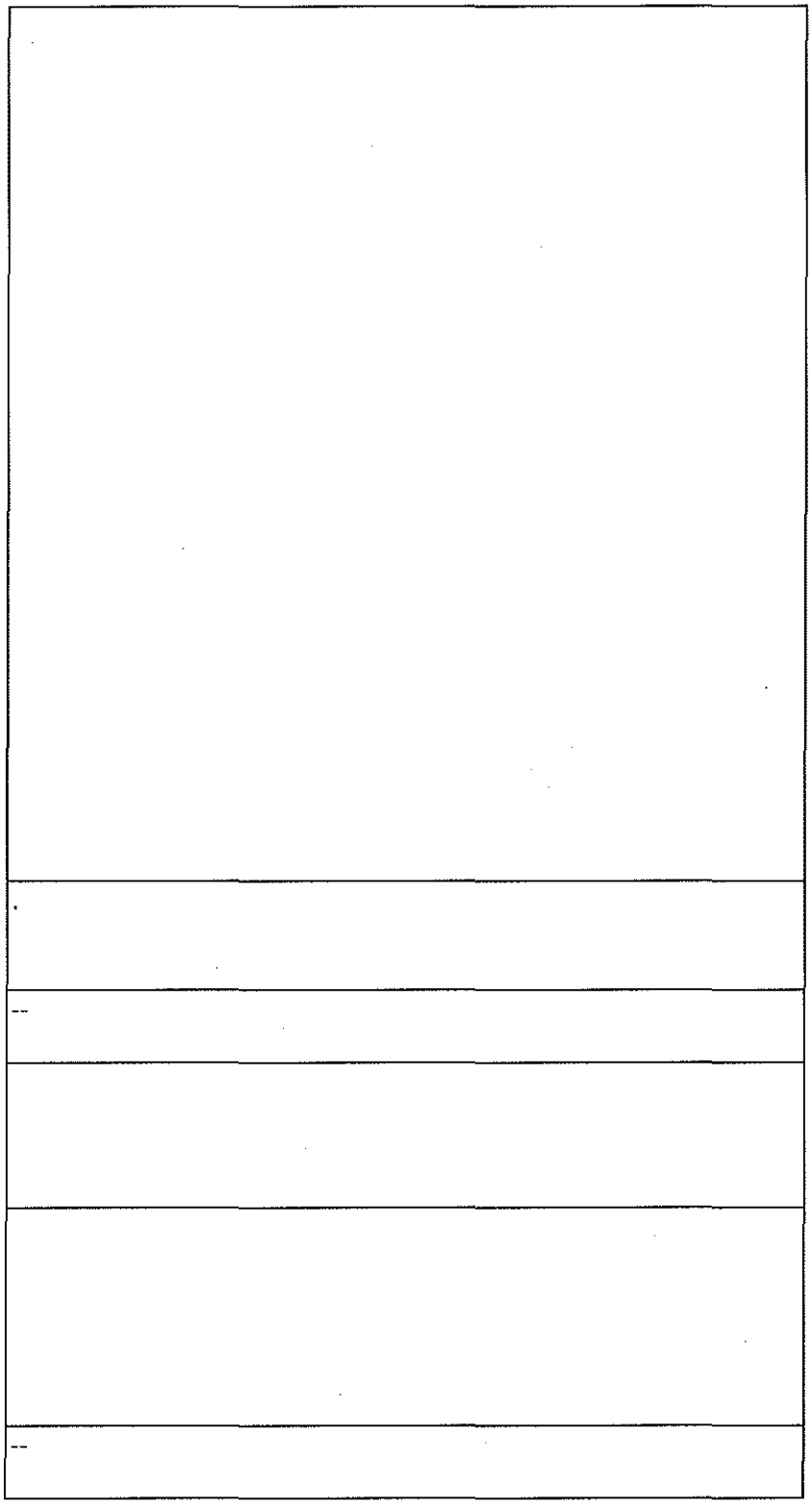

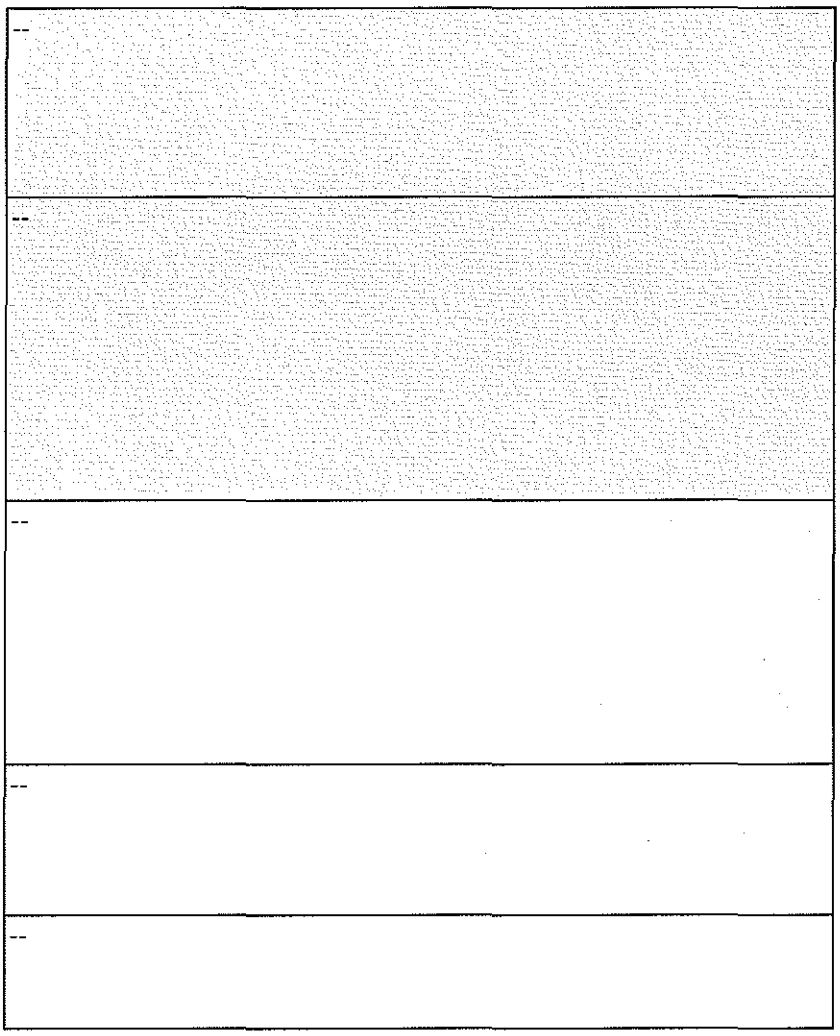

Lead Institution(s)
University of Alberta
Wageningen UR, BGI
IRRI, BGI, CAS
World Agroforestry Centre (ICRAF)
The University of Adelaide

Crops for the Future
TGAC

Leibniz institute of Plant Genetics and Crop Plant Research (IPK)
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University of Bristol
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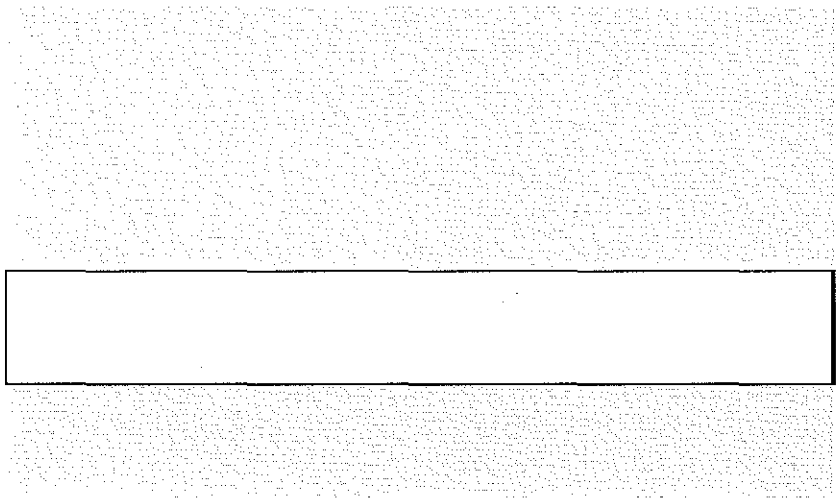
Bioversity as lead PI of the project. IBP as donor.



Bioversity

JHI
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TACC, University of Arizona and CSHL
IRRI

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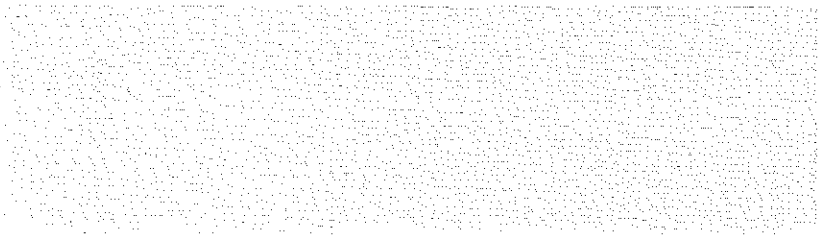
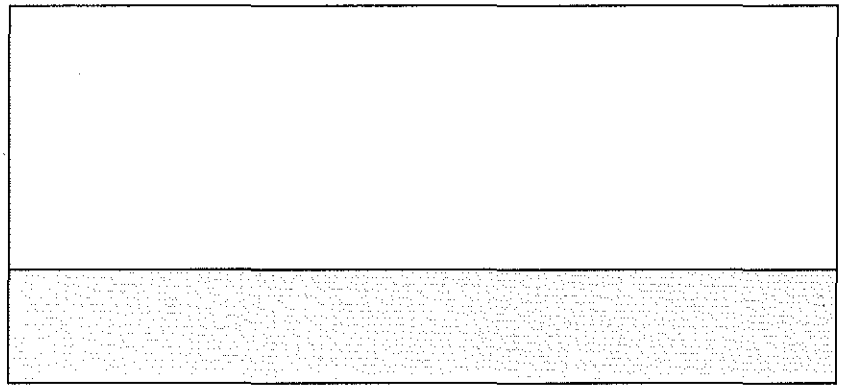
Cornell University

Australian Plant Phenomics Facility (APPF)
Oregon State University



CIMMYT
Bioversity



ICRISAT
Cornell University
Bioversity, CIAT, CIP, CIRAD, IITA

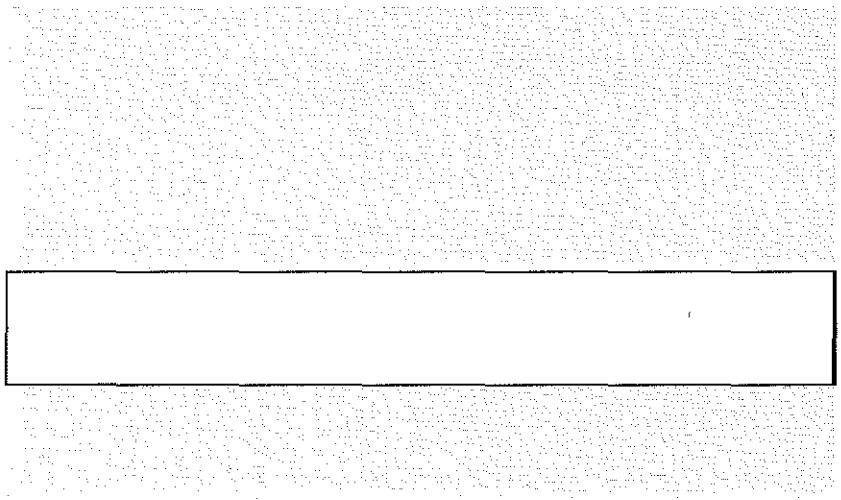
Forschungszentrum Jülich
Cornell University
University of Reading (UK)
Cornell University
EBI

James Hutton Institute

USDA
INRA
INRA
JIC

Main Contact Person
Gane Ka-Shu Wong, Michael Deyholos
Richard Finkers, Sander Peters.
Ken McNally (IRRI)
Ramni Jamnadass
Trevor Garnett
Sean Mayes
Sarah Ayling

Jacques Le Gouis
Nils Stein
--
Keith Edwards
Richard Percy
Elizabeth Arnaud



Hannes Gaisberger

Paul Shaw and Sebastian Raubach

Doreen Ware

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Vina Alvarez

Bretting, Peter

From: Hannes Dempewolf <hannes.dempewolf@croptrust.org>
Sent: Thursday, July 16, 2015 3:58 AM
To: Bretting, Peter
Cc: Williams, Karen -ARS
Subject: Re: collaboration on collecting CWRs in the US
Attachments: CWR draft agenda.xls

Hi Peter,

Thanks. Yes, I know Linda Marek quite well. We just wanted to approach you and Karen first about the general idea and see whether you think this may be worth exploring. With regards to the Izmir meeting, we'd like to leave it up to you to decide who you think should represent the USDA - Laura Marek could of course also be a logical choice. Btw, I am attaching here a more detailed agenda (see sheet 2 for the CWR meeting).

With regards to the visa issues, we would of course make sure to choose a country that is workable for you. One option could be Uganda, where we are already supporting a project on pre-breeding sunflowers. Do you think this could be workable?

Best,
Hannes

Hannes Dempewolf
Scientist and Project Manager
Global Crop Diversity Trust
Platz der Vereinten Nationen 7
53113 Bonn, Germany
Office: +49 228 85427 115
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Securing our Food, Forever

On Wed, Jul 15, 2015 at 8:34 PM, Bretting, Peter <Peter.Bretting@ars.usda.gov> wrote:

Hi Hannes—thanks for the note. For sunflower collecting, Linda Marek, our sunflower curator in Ames, would be an important contact, in addition to Karen.

Whether or not a visiting researcher from a developing nation could secure the appropriate visa for entry into the US would probably depend on their specific country of origin. This might be particularly important if the visitor would travel widely in the US as part of a plant collecting expedition.

All the plants the NPGS collects in the US are in the public domain and so wouldn't require any MTA for export from the US.

Best regards.

Peter

Peter Bretting

USDA/ARS Office of National Programs

Room 4-2212, Mailstop 5139

5601 Sunnyside Avenue

Beltsville, MD 20705-5139

Phone 1.301.504.5541

Fax 1.301.504.6191

Mobile Phone [redacted]

E-mail peter.bretting@ars.usda.gov

Web site: http://www.ars.usda.gov/research/programs/programs.htm?NP_CODE=301

From: Hannes Dempewolf [mailto:hannes.dempewolf@croptrust.org]
Sent: Wednesday, July 15, 2015 10:48 AM
To: Bretting, Peter; Williams, Karen -ARS
Cc: Greene, Stephanie; Luigi Guarino; Crop Wild Relatives; Dagny poser
Subject: collaboration on collecting CWRs in the US

Dear Peter and Karen,

Last week we received a very nice visit from Stephanie Greene (cced here). Amongst the topics we discussed were also ways in which we can enhance our collaboration with the USDA in the framework of the CWR project. As you will remember from our earlier email exchange, unfortunately we cannot fund the USDA directly for collecting CWRs. However, we do have some funding available for capacity building efforts. Together with Stephanie we thought perhaps

we could explore the option of supporting a developing country participant to join one of the USDA's collecting missions, e.g. for sunflower wild relatives, which are a key target of the project. In case such funding would be provided, perhaps we could discuss whether it may even be possible for the USDA to duplicate some of that newly collected sunflower germplasm to the MSB through an SMTA, or else without an SMTA but with the permission for MSB to make it available through an SMTA. Do you think this is an option worth exploring further? We would really love to be able to include the US as a partner in this global initiative to collect CWRs and given that wild sunflower wild relatives are almost exclusively found in the US, it would be great if we could collaborate here.

Given our ongoing discussions on how to collaborate on collecting CWRs, we would also like to invite a representative of the USDA to our first partners meeting of the CWR project that will take place in **Izmir, Turkey from the 20th to the 22nd of October.** The meeting will be an opportunity for the collecting partners as well as many of the partners of our pre-breeding projects to gather in one place and discuss topics of mutual interest. The lead of our carrot pre-breeding project, Phil Simon (also USDA), for example, has already confirmed his participation. Collecting projects are now under way in Kenya, Georgia, Portugal, Italy, Brazil, Cyprus, Azerbaijan, Vietnam and Nigeria with several further agreements currently under negotiation. So far we support prebreeding/evaluation partnerships on nine crops (rice, sunflower, eggplant, lentil, potato, chickpea, wheat, sweet potato, sorghum and carrot) and we hope to have several further projects under way by that time.

The annual meeting of the CGIAR genebank managers (which the Crop Trust also organizes every year) will take place in Izmir around these dates as well and we are planning together with our hosts at the Aegean Agricultural Research Institute an open day full of interesting talks and discussions on Tuesday the 20th of October. This will be an opportunity for a free exchange of ideas between a great diversity of PGRFA experts that will gather at that occasion.

The CWR Project meeting will also include a set of workshops specifically for our partners from the collecting projects to address cross-cutting issues of common interest, such as (1) Data Collection (2); PGRFA Policy issues (including ITPGRFA); (3) Seed handling and drying.

Even though the USDA is not (yet) a formal partner in the collecting component of the CWR project, given our ongoing discussions, we would like to invite a USDA representative, such as for example Karen, to attend. In case your unable to cover your own costs to attend the meeting, please let us know that you require the travel costs to be covered.

We are looking forward to receiving your reply at your earliest convenience and will follow up with details about the registration and an official letter of invitation shortly thereafter.

Thank you and I am looking forward to hearing from you.

Best,

Hannes

Hannes Dempewolf
Scientist and Project Manager
Global Crop Diversity Trust
Platz der Vereinten Nationen 7
53113 Bonn, Germany
Office: +49 228 85427 115
Mobile: [redacted]
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Item

Monday 19th October (CWR participants arrive)	
Tuesday 20th October - JOINT OPEN DAY	
07.00-08.00	Transportation to AARI
08.00-08.30	Registration
08.30-09.30	Session 1: How well are we doing? Taking stock of the global state of PGR collections
09.30-10.30	Session 2: The future of genebanks
10.50-11.30	Panel discussion
11.30-12.00	Drafting of statement for the Commission on Plant Genetic Resources for Food and Agriculture
14.00-17.00	Visit to national genebank, AARI & CGIAR research station
17.00-18.00	One-on-ones/QMS meetings
Wednesday 21st October	
8:30 - 10:00	Welcome session and Keynote lecture on ou
10:00 - 10:15	
10:15 - 12:30	Joint session: CWR diversity in genebanks
12:30 - 13:30	
13:30 - 15:00	Joint session: PGRFA Policy
15:00 - 15:15	
15:15 - 17:00	Separate workshop session 1

17:00 - 20:00	
Thurday 22nd October	
8:30 - 10:00	Separate workshop session 2
10:00 - 10:15	
10:15 - 12:30	Joint session: Conserving genetic stocks
12:30 - 13:30	
13:30 - 15:00	Joint session: Two-way flow of germplasm and data
15:00 - 15:15	
15:15 - 17:00	Wrap-up session
17:00 - 20:00	
Friday 23rd October (only relevant for PMT and Advisory Group membe	
8:00 - 10:00	PMT meeting - Session 1
10:00 - 12:30	CWR Project Advisory Group meeting
12:30 - 13:30	
13:30 - 15:00	PMT meeting - Session 2
15:00 - 15:15	
15:15 - 17:00	PMT meeting - Session 3
17:00 - 20:00	

Participants involved	Furthed details/Objectives
Keynote: Luigi Guarino followed by panel discussion	
Keynote: Theo van Hintum, Susan McCouch, Ruaraidh Sackville Hamilton	
Break	
Panel members: Luigi Guarino, Theo van Hintum, Ruaraidh Sackville Hamilton, others to be determined	
Lunch	
All CWR collecting and pre-breeding partners. Welcome by Crop Trust and Kew and key note by CIAT (Nora Castaneda?)	
Coffee and Tea	
All CWR partners; Session leader: Luigi Guarino/Dave Ellis? (?)	Crop wild relative diversity: what is available in genebanks and what information do we have about the collections; what could be further priorities for collecting (beyond the lifetime of the project)
Lunch	
All CWR partners; Session leader: Alvaro Toledo (?)	Policy: the respective rights and responsibilities of users and conservers of CWR diversity
Coffee and Tea	
Prebreeding and Collecting partners in separate sessions. Prebreeding session lead: Hannes; Collecting session lead: Ruth (?)	PREBREEDING GROUP: 'Across-crop' pre-breeding and evaluation strategies for climate change adaptation. COLLECTING GROUP: Seed drying

Break and Dinner	
Prebreeding and Collecting partners in separate sessions. Prebreeding session lead: Dave Marshall/Peter Wenzl (?); Collecting session lead: Ruth (?)	PREBREEDING GROUP: Project data acquisition, management and sharing. COLLECTING GROUP: Passport data collection, curation and sharing
Coffee and Tea	
All CWR partners; Session leader: Ruaraidh Sackville Hamilton (?)	Conservation of pre-bred lines and genetic stocks: who does what? what should be conserved and where? How can users be better engaged?
Lunch	
All CWR partners; Session leader: Theo van Hintum (?)	Creating a two-way flow of germplasm and data between genebanks and users
Coffee and Tea	
All CWR partners: Session leaders Hannes and Ruth (?)	How to continue to engage and communicate as community of project partners for the rest of the project and beyond? The role of the project as a platform to promote the collecting, conservation and use of CWRs, also beyoned the project's limits
Break and Dinner	
rs)	
PMT members	
PMT and Advisory Group members	
Lunch	
PMT members	
Coffee and Tea	
PMT members	
Break and Dinner	

Bretting, Peter

From:	Bretting, Peter
Sent:	Wednesday, July 15, 2015 2:34 PM
To:	'Hannes Dempewolf'
Cc:	Williams, Karen -ARS
Subject:	RE: collaboration on collecting CWRs in the US

Hi Hannes—thanks for the note. For sunflower collecting, Linda Marek, our sunflower curator in Ames, would be an important contact, in addition to Karen.

Whether or not a visiting researcher from a developing nation could secure the appropriate visa for entry into the US would probably depend on their specific country of origin. This might be particularly important if the visitor would travel widely in the US as part of a plant collecting expedition.

All the plants the NPGS collects in the US are in the public domain and so wouldn't require any MTA for export from the US.

Best regards.

Peter

Peter Bretting
USDA/ARS Office of National Programs
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Phone 1.301.504.5541
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Mobile Phone [redacted]
E-mail peter.bretting@ars.usda.gov
Web site: http://www.ars.usda.gov/research/programs/programs.htm?NP_CODE=301

From: Hannes Dempewolf [mailto:hannes.dempewolf@croptrust.org]
Sent: Wednesday, July 15, 2015 10:48 AM
To: Bretting, Peter; Williams, Karen -ARS
Cc: Greene, Stephanie; Luigi Guarino; Crop Wild Relatives; Dagny poser
Subject: collaboration on collecting CWRs in the US

Dear Peter and Karen,

Last week we received a very nice visit from Stephanie Greene (cced here). Amongst the topics we discussed were also ways in which we can enhance our collaboration with the USDA in the framework of the CWR project. As you will remember from our earlier email exchange, unfortunately we cannot fund the USDA directly for collecting CWRs. However, we do have some funding available for capacity building efforts. Together with Stephanie we thought perhaps we could explore the option of supporting a developing country participant to join one of the USDA's collecting missions, e.g. for sunflower wild relatives, which are a key target of the project. In case such funding would be provided, perhaps we could discuss whether it may even be possible for the USDA to duplicate some of that newly collected sunflower germplasm to the MSB through an SMTA, or else without an SMTA but with the permission for MSB to make it available

through an SMTA. Do you think this is an option worth exploring further? We would really love to be able to include the US as a partner in this global initiative to collect CWRs and given that wild sunflower wild relatives are almost exclusively found in the US, it would be great if we could collaborate here.

Given our ongoing discussions on how to collaborate on collecting CWRs, we would also like to invite a representative of the USDA to our first partners meeting of the CWR project that will take place in **Izmir, Turkey from the 20th to the 22nd of October.** The meeting will be an opportunity for the collecting partners as well as many of the partners of our pre-breeding projects to gather in one place and discuss topics of mutual interest. The lead of our carrot pre-breeding project, Phil Simon (also USDA), for example, has already confirmed his participation. Collecting projects are now under way in Kenya, Georgia, Portugal, Italy, Brazil, Cyprus, Azerbaijan, Vietnam and Nigeria with several further agreements currently under negotiation. So far we support prebreeding/evaluation partnerships on nine crops (rice, sunflower, eggplant, lentil, potato, chickpea, wheat, sweet potato, sorghum and carrot) and we hope to have several further projects under way by that time.

The annual meeting of the CGIAR genebank managers (which the Crop Trust also organizes every year) will take place in Izmir around these dates as well and we are planning together with our hosts at the Aegean Agricultural Research Institute an open day full of interesting talks and discussions on Tuesday the 20th of October. This will be an opportunity for a free exchange of ideas between a great diversity of PGRFA experts that will gather at that occasion.

The CWR Project meeting will also include a set of workshops specifically for our partners from the collecting projects to address cross-cutting issues of common interest, such as (1) Data Collection (2); PGRFA Policy issues (including ITPGRFA); (3) Seed handling and drying.

Even though the USDA is not (yet) a formal partner in the collecting component of the CWR project, given our ongoing discussions, we would like to invite a USDA representative, such as for example Karen, to attend. In case your unable to cover your own costs to attend the meeting, please let us know that you require the travel costs to be covered.

We are looking forward to receiving your reply at your earliest convenience and will follow up with details about the registration and an official letter of invitation shortly thereafter.

Thank you and I am looking forward to hearing from you.

Best,

Hannes

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Bretting, Peter

From: Hannes Dempewolf <hannes.dempewolf@croptrust.org>
Sent: Wednesday, July 15, 2015 10:48 AM
To: Bretting, Peter; Williams, Karen -ARS
Cc: Greene, Stephanie; Luigi Guarino; Crop Wild Relatives; Dagny poser
Subject: collaboration on collecting CWRs in the US

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We are looking forward to receiving your reply at your earliest convenience and will follow up with details about the registration and an official letter of invitation shortly thereafter.

Thank you and I am looking forward to hearing from you.

Best,

Hannes

Hannes Dempewolf
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Bretting, Peter

From: Bretting, Peter
Sent: Friday, October 02, 2015 12:55 PM
To: 'Luigi Guarino'
Cc: Cyr, Pete
Subject: More on ICRISAT implementation of GRIN-Global. Looks like they'd like some training.

From: Modi, Pradyut (ICRISAT-IN) [mailto:P.Modi@cgiar.org]
Sent: Thursday, October 1, 2015 11:30 PM
To: Cyr, Pete <Pete.Cyr@ARS.USDA.GOV>
Cc: ThimmaReddy, M (ICRISAT-IN) <T.REDDY@CGIAR.ORG>; Upadhyaya, HD (ICRISAT-IN) <H.UPADHYAYA@CGIAR.ORG>
Subject: Installation of Grin-Global at ICRISAT - request for help

Dear Pete Cyr

Greeting from Pradyut J Modi, ICRISAT.

I am sending mail on behalf of Genebank at ICRISAT. Mr Thimma Reddy from ICRISAT Genebank has attended workshop on Grin Global at ARS, USDA around 2 and half year back.

At ICRISAT, Genebank team and IT department has installed on premise Grin Global server that can be accessed at:

http://germplasm.icrisat.org

We have populated pilot passport data from ICRISAT germplasm collection with some difficulty. Working hard to understand the grin global database structure and its functionalities. We wanted to use grin global for characterization, evaluation and regeneration and migrate all genebank data into grin global platform.

We need your help and looking for opportunity for going thru training / orientation to move forward and implement Grin Global for all major activities of ICRISAT Genebank during this year. Your help will be very much appetited on this.

With Kind Regards

Pradyut J Modi
Head, IT Department
ICRISAT – International Crops Research Institute for the Semi-Arid Tropics
www.icrisat.org For ICRISAT's scientific information see: http://EXPLOREit.icrisat.org

---

Address: ICRISAT, Patancheru, Hyderabad, Telangana 502324, India
Email: p.modi@cgiar.org I Skype: [redacted]
Phone: +91 40 3071 3244 I Fax: +91 40 30713072; M: [redacted]

Demand-driven innovation – key to fighting poverty in the drylands

Connect with us:
ICRISAT is a member of the CGIAR Consortium

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E-mail peter.bretting@ars.usda.gov
Web site: http://www.ars.usda.gov/research/programs/programs.htm?NP_CODE=301

Bretting, Peter

From: Hannes Dempewolf <hannes.dempewolf@croptrust.org>
Sent: Wednesday, September 30, 2015 10:32 AM
To: Bretting, Peter
Subject: Fwd: Nota sobre Curso-Taller en Bolivia
Attachments: Nueva imagen (76).bmp; smime.p7s

FYI, training on Grin Global in Bolivia!

Hannes

Hannes Dempewolf
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---------- Forwarded message ----------
From: **Matija Obreza** <matija.obreza@croptrust.org>
Date: 2015-09-30 16:29 GMT+02:00
Subject: Fwd: Nota sobre Curso-Taller en Bolivia
To: Science team <science@croptrust.org>
Cc: Luis Salazar <luis.salazar@croptrust.org>

FYI

> Estimado Carlos, Dr Tito, Alfonso
> El Curso Taller fue reportado en la página web de INIAF (www.iniaf.gob.bo)
> Muestro una vista de ella, donde Carlos es visualizado.
>
> Saludos cordiales
>
> Edwin Iquize-Villca
> c.c.: Majita Obreza y Alvaro Otondo

Bretting, Peter

From:	Hannes Dempewolf <hannes.dempewolf@croptrust.org>
Sent:	Tuesday, November 24, 2015 8:02 AM
To:	Wiersema, John
Cc:	Colin Khoury; Luigi Guarino; Castaneda Nora; Crop Wild Relatives; Bretting, Peter
Subject:	work on CWR inventory

Dear John,

I hope this message finds you well. We were pleased to hear that the official launch date of GRIN Global has now been set to the 30th of November. It will be excellent to see the new system go live. As we had discussed previously, perhaps this would also be a good occasion for us to think about how we could continue to reinforce links between the GRIN CWR inventory and the Harlan and de Wet inventory on the CWR Project website. As you know, our hope is that these two resources could eventually be merged, since we believe the USDA would be excellently suited to continue to curate such a resource in the future.

Following recent recommendations of the advisory group to the CWR project, we are now over the short-term trying to work on enhancing and expanding on the information on 'use of CWRs' of the current version of the inventory. We would like to move ahead with this in close collaboration with you/USDA, to avoid duplicating efforts. We are in the process of hiring an external consultant for the next two or three months to work with us on (1) research more relevant literature for 'use references' for the CWR taxa that are included in the Harlan and de Wet inventory; (2) further develop the current categorization scheme on 'use' by rationalizing it and referencing it to relevant ontologies; (3) design a revised search function and mask based on the more advanced categorization scheme; (4) liaise with relevant experts from the Crop Trust, CIAT and the USDA to ensure the work is undertaken in synchrony with other relevant databases.

We therefore wanted to approach you to see whether you would be willing to discuss possible next steps with us on a skype/teleconference call, some time soon? Our intention is to engage the consultant starting from December 1st and we are eager to make sure that his work is closely aligned with that of your group, straight from the start.

During the call we would also want to explore with you some ideas about the future of the ecogeographic CWR dataset that the team at CIAT has put together and that has now been released on the CWR Project website.

Please let me know whether you would be available for such a call.
Thanks,
Hannes

Hannes Dempewolf
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Bretting, Peter

From: Matija Obreza <matija.obreza@croptrust.org>
Sent: Thursday, February 26, 2015 4:22 AM
To: Bretting, Peter; Tim Knight
Subject: Communicating Genesys to the World

Dear Dr. Bretting,

We've been busy working on new ways to enhance Genesys and attract more users to it:

In looking to activate and launch an integrated-communications effort that will help us attract more genebanks and end-users to Genesys, we've recently contracted PLMR, a UK-based Public Relations firm, with whom the Crop Trust has been working successfully during the past several months. In order for them to better understand Genesys, we've agreed for them to reach out to some of our close collaborators. I hope you agree to be one of them!

We believe you can provide an interesting perspectives on Genesys and its importance in the Global PGR System. Your experience with, and utilization of Genesys will be key for PLMR in shaping good stories to tell, which will enhance the website (from a communications standpoint), as well as provide us with valuable data for the creation of marketing and social media materials, case stories, etc.

I would appreciate it if you could make some time to talk with Tim (whom I copy here) and/or one of his PLMR colleagues. They will get in touch with you.

If you have any questions, let me know and I'll try my best to answer them.

I thank you in advance for your support, Best,

Matija Obreza
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53113 Bonn, Germany
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Conserving Crop Diversity, Forever

Bretting, Peter

From:	Bretting, Peter
Sent:	Monday, September 07, 2015 3:51 PM
To:	Luigi Guarino
Cc:	Kinard, Gary
Subject:	Re: USDA requires recipients to pay for shipment

Hi Luigi--sorry for the delayed reply. I was in Berkeley/Albany, CA last week visiting our research sites there, and attending our annual meeting with Chinese scientific counterparts.

Gary Kinard can confirm my understanding of the note below. Usually we send seeds by the least costly carrier, US Postal Service, at no charge to the requestor. If the requestor asks for expedited service, via a courier such as FedEx, UPS, or DHL, we ask for the requestor's account number so that they would pay for the expedited service. This particular request apparently did request the expedited service. If my understanding is correct then this is not a new policy. For some time we've asked those who requested expedited service to defray the cost of that.

Thanks,

Peter

Peter Bretting
National Program Leader
USDA/ARS Office of National Programs
George Washington Carver Center
4-2212, Mailstop 5139
Beltsville, MD 20705-5139
301-504-5541
Cell [redacted]
peter.bretting@ars.usda.gov

On Sep 3, 2015, at 5:19 AM, Luigi Guarino <luigi.guarino@croptrust.org> wrote:

> New policy?
>
> ---------- Forwarded message ----------
> From: **Charlotte Lusty** <charlotte.lusty@croptrust.org>
> Date: Thursday, September 3, 2015
> Subject: Fwd: USDA requires recipients to pay for shipment
> To: Luigi Guarino <luigi.guarino@croptrust.org>
>
> -------- Forwarded Message --------
> **Subject:** USDA requires recipients to pay for shipment
> **Date:** Wed, 2 Sep 2015 21:44:34 +0000

From: Payne, Thomas (CIMMYT) <t.payne@CGIAR.ORG>
To: Ellis, David (CIP) <D.Ellis@cgiar.org>, Hamilton, Ruaraidh Sackville (IRRI) <r.hamilton@irri.org>
Lusty, Charlotte (Global Crop Diversity Trust) <charlotte.lusty@croptrust.org>

Here is something new. USDA is requiring recipients to pay for shipment.

From: B580, NPGSdistributions - ARS [mailto:NPGSdistributions.B580@ARS.USDA.GOV]
Sent: Wednesday, September 02, 2015 4:39 PM
To: Mezzalama, Monica (CIMMYT)
Cc: Payne, Thomas (CIMMYT)
Subject: Order 271765

Dear Dr. Monica Mezzalama,

Your request of seeds from the US National Plant Germplasm System has been received at the USDA/Animal and Plant Health Inspection Service for the required agricultural inspection. The inspection has been scheduled and should be completed and ready to ship prior to Sept 10, 2015. The order consists of *Triticum* sp. being sent to Thomas S. Payne in a single envelope weighing approximately 4oz. The attached document accompanies the order.

It is noted in the Seed Importation Procedures to avoid shipping by United States postal services.

If requested, we will send the shipment to you using an expedited courier service, (FEDEX, DHL, TNT, etc), but you must pay for the service either by providing us with your courier account number or making arrangement with the courier service for pick-up of the shipment from our facilities.

We shipped an order in June using a DHL account. Would you like us to use this account again? Or, with the small envelop, would FedEx be preferred?

I can email you a copy of the Phytosanitary Certificate (PC) once it is issued, or would you prefer a draft version for review before a final PC is issued?

Thank you,

Jennifer Friedman

USDA/ARS/NGRL

Plant Exchange Office

Building 580, BARC-East

Beltsville, MD 20705

USA

--
Luigi Guarino
Global Crop Diversity Trust
Platz der Vereinten Nationen 7, 53113 Bonn
Germany
New website: www.croptrust.org *Securing Our Food, Forever*

<smime.p7s>