

# Activity Report 2012

University of Agriculture, Faisalabad (UAF)

**Programme:** Higher Education Excellence  
in Development Cooperation (exceed)

**“exceed” Center:** International Center for  
Development and Decent Work (ICDD)

**Reporting period:** 01.01.2012-31.12.2012

**DAAD Project Number:** 55517899

**ICDD Project Number:** 5 4034 30

  

**Scientific Project Leader:** Prof. Dr. Iqrar Ahmad Khan, Vice Chancellor

**Date and Signature:** \_\_\_\_\_

  

**Name of Financial Officer:** Mr. Abdul Ghafoor Khan, Treasurer

**Date and Signature:** \_\_\_\_\_

## 1) Situation at the Beginning of the Reporting Period<sup>1</sup>

During the year 2011, two international conferences, Migration and Desertification and Urban, Peri-Urban Agriculture, and Employment & Value Chain Management and two workshops ICDD Assessment Workshop and International Workshop on Solar and Bio Energy System were organised.

Prof. Younas served at Kassel as Ela Bhatt Guest Professor and he also participated in PhD students workshop held at University of Witwatersrand, South Africa.

Ms Juliane Erbach an internee from the University of Kassel Witzenhausen, worked in the Peri-Urban areas of Faisalabad from September 28 through December 20, 2011.

About 10 MS and 2 PhD students from first cohort and one from the 2<sup>nd</sup> cohort did their filed work during 2011.

Prof. Dr. Iqrar A. Khan visited Kassel to participate in the ICDD Steering Committee meeting during July 2012 and Dr. Asif Ali participated in the ICDD Student workshop at Egerton University, Kenya held March 17-25, 2012. Asif also presented the ICDD activities at UAF in the ICDD Evaluation program at Kassel during December 2012.

## 2) General Conceptual Developments,<sup>2</sup> Changes Compared to the Preceding Year,<sup>3</sup> Personnel Situation,<sup>4</sup> Third-Party Subsidies (if applicable)<sup>5</sup>

An agreement was signed for instituting a double degree program in Sustainable International agriculture with University of Kassel and University of Gottingen.

In addition to the 3 PhD students of the first two cohorts, 3 more PhD students selected in the 3rd and 4th cohort started their research work, two enrolled at the University of Kassel and another at the University of Agriculture, Faisalabad. Under the supervision of Prof. Iqrar A. Khan, Dr. Asif Ali continued coordinating the ICDD activities at UAF with the assistance of two admin staff.

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1 e.g. number of ICDD PhD students, status of their PhD theses, number of ICDD Research Clusters in which the university is involved, Planned Activities like Conferences etc.

2 e.g. development of double degree programs, cooperation with new institutes of the university etc.

3 e.g. changes of staff or of responsibilities, new research clusters, new PhD students

4 staff in charge of ICDD matters

5 e.g. Personnel Costs and Staff for ICDD administration funded by the partner university and which are not included in the partner budget, follow-up scholarships for students funded through exceed/the ICDD, follow-up funding for research clusters that originated at the partner university

Picking up from the ICDD research and development themes like community development, peri-urban agriculture, migration, environmental sustainability, policy issues, substantial resources were mobilised from national and international sponsors including IFPRI, USDA, ACIAR and TIKA.

### 3) Activities Performed and their Impact

#### 3.1 Honorary

**PhD Saadia Hanif Enumerators<sup>6</sup>** (Finance Plan Reference: 2.1.6)

This amount was used to pay the salary of Enumerator. The Enumerator helped in farmer interviews. These interviews were conducted at 210 dairy farms in Lahore and Faisalabad to collect socioeconomic data for the second phase of data collection in my PhD research.

#### 3.2 Consumables

**Material Costs Research Cluster Hensel/Munir<sup>7</sup>**

- ***Material costs for development of different processing systems for value addition of different products (RC H/M)*** (Finance Plan Reference: 2.5.4)

Material cost for the fabrication of development of solar roaster for ground nuts and other agricultural products (with PV modules and DC motors), development of baking oven, modification of the existing distillation system for steam distillation, casting and fabrication of different steam receivers, development of storage iron block for steam generation, development of steam separators, fabrication of different steam receivers, development of solar cooling system for the storage of perishable products, Fabrication of vessels/containers for milk pasteurization, development of hybrid bio- mass boiler and accessories etc.

- ***Material costs for laboratory apparatus (RC H/M)*** (Finance Plan Reference: 2.5.5)

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In this section, please explain for what purpose Saadia received a honorarium for enumerators.

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For this section, the required information needs to be supplied by the research cluster holders. It is of particular importance to fill in what has actually been done (in comparison to what had been planned at the beginning of the year). This can be done either point by point or in a paragraph that incorporates all of the points touching upon the respective expenses for material costs of the research cluster.

Laboratory apparatus (Florentine flasks, laboratory distillation apparatus, laser thermometers, instrument for reflectivity and absorbance etc.) for quality testing and comparison of results.

- **Material costs for the data monitoring system of the solar project (RC H/M)** (Finance Plan Reference: 2.5.6)

Pyranometers (02 Nos.), thermocouples and data logger (for continuous data recording) and a computer for monitoring real time data of the solar systems. These equipments will help to evaluate the performance of the system and for the achievement of optimal parameters during processing.

- **marketing material, printing (RC H/M)** (Finance Plan Reference: 2.5.7)

For the dissemination of the project results and publicity of the project in 2012

- **Research expenses (RC H/M)** (Finance Plan Reference: 2.5.8)

Research expenses for experiments with different agri-products during 2012

#### **Material Costs Research Cluster Khan/Bürkert<sup>8</sup>**

- **research material (RC Khan/Bürkert)** (Finance Plan Reference: 2.5.13)

1. Analysis for SEM, TGDA and XRD

2. Isoamyl Alcohol, NaCl, 2-Propanol, Absolute Ethanol Lab grade, Agrose, Tag DNA Polymerase, dNTPS, Gene Ruler, Spirit Lamp, Ice Cooler Racks for PCR Plates, Eppendorf Tubes etc.

#### **Material Costs UAF<sup>9</sup>**

- **books/journals UAF** (Finance Plan Reference: 2.5.17)

Keeping in view the research requirements of ICDD Scholars working on Datepalm, the following books of International Authors were purchased:-

1. Date Palm Biotechnology By Jain

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9

Please insert information on the points that have not been elaborated on yet.

2. Dates: Production Processing Food and Medicinal Value by Manickara Sagan.

3. Genera Palmarum: The Evaluation and classification of Palms by Dransfield.

- **stationary/photocopying and other office consumables UAF** (Finance Plan Reference: 2.5.18)

The following purchase has been made under this Budget Head to facilitate the research activities of ICDD Students and office utilities.

Papers, Printer Toner, Led Pencils, Rubber, Sharpener, Table Stand, Blue and Black Markers, Blue and Black Pencils and others office related consumables Items.

2. Printing of ICDD Bags

- **research material UAF** (Finance Plan Reference: 2.5.19)

1. Tender Publication Fee

2. Primers for Mr. Naqeeb Ullah working on Datepalm.

3. 1kb DNA ladder, Storage racks for enzymes, Eppendorf tube Stands, Hinged lid boxes, Micro Tips (10 ul), Nitrile Gloves, PCR Tubes, Micro Tios (200ul) Micro Tips (1000 ul) Forceps large size, Glass Petri Plates

- **marketing material ICDD UAF** (Finance Plan Reference: 2.5.20)

Prepare more than 800 ICDD bags for the Publicity of Project.

- **money transfer costs UAF** (Finance Plan Reference: 2.5.21)

These expenses consist of bank charges and expenses incurred for the transfer of the funds from the University of Kassel to the UAF. In addition Cheque Book charges also paid from this Budget Head.

- **Consumables UAF** (Finance Plan Reference: 2.5.28)<sup>10</sup>

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In this section, please insert information on the additional consumables and equipment bought, namely:

GPS (Garmin), Eppendorf tubes (1.5, 2 ml), Falcon tubes (15,50 ml), Micropipette tips (10,20,100,200,500, 1000 ul), Latex gloves, Flasks (100,500,1000 ml), Beakers, Bottels (50, 100, 500, 1000 ml), Follin reagent, DPPH, Cryotubes, Ethanol, Sodium phosphate monobasic monohydrate NaH<sub>2</sub>PO<sub>4</sub>, Sodium phosphate disodique Na<sub>2</sub>HP<sub>04</sub>. 12H<sub>2</sub>o).

*Purchase of following equipment and chemicals for the ICDD PhD/MSc Scholar. The matter also brought to the notice of ICDD funding agency:-*

*GPS (Garmin), Eppendorf tubes (1.5, 2 ml), Falcon tubes (15,50 ml), Micropipette tips (10,20,100,200,500, 1000 ul), Latex gloves, Flasks (100,500,1000 ml), Beakers, Bottels (50, 100, 500, 1000 ml), Follin reagent, DPPH, Cryotubes, Ethanol, Sodium phosphate monobasic monohydrate  $\text{NaH}_2\text{PO}_4$ , Sodium phosphate disodique  $\text{Na}_2\text{HP04} \cdot 12\text{H}_2\text{o}$ ).*

### **3.3 Mobilities and Subsistence Costs**<sup>11</sup>

#### **UAF**

- ***PhD Sabah Saleem local travel costs II*** (Finance Plan Reference: 3.1.38, subsistence)

The funds for travel costs were spent on payment of fuel charges and car rentals for travelling in Rawalpindi and Islamabad to meet government officers and key informants. The purpose of these to gather data/information on migration.

- ***PhD Hanif, travel costs field research II*** (Finance Plan Reference: 3.1.43, subsistence)

The funds for travel costs are spent on payment of fuel charges and car rentals for travelling in Lahore and Faisalabad to go to dairy farms. There were total 210 farms from where data is collected. On an average two to three visits were made to one farm for collection of socioeconomic data at these dairy farms.

#### **Research Cluster Bürkert/Schlecht**<sup>12</sup>

- ***travel costs for training in Germany (Ms. Aniza) (RC Bürkert)*** (Finance Plan Reference: 3.1.44)

Not availed

#### **Research Cluster Hensel/Munir**<sup>13</sup>

- ***traveling and visa expenses of Dr. Anjum Munir to Germany (RC H/M)*** (Finance Plan Reference: 3.1.47)

Visit to solar experiment sites of the University of Kassel, Germany (Prof .Dr. Oliver Hensel)

- ***travel costs in Pakistan 20 participants (RC H/M)*** (Finance Plan Reference: 3.1.48, 3.2.34). Activity shifted in 2013

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Please provide information on all of the individual mobilities. Thereby the following question should be answered: Who travelled when, where and why?

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For this section, the required information needs to be supplied by the research cluster holders.

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For this section, the required information needs to be supplied by the research cluster holders.

#### **Research Cluster Khan/Bürkert<sup>14</sup>**

- **local travel costs field research in Pakistan (RC Khan/Bürkert)** (Finance Plan Reference: 3.1.59)

1. POL purchased by Mr. Shoaib-ur-Rehman during the visit of Prof. Andreau Buerkert.
- 2.. POL Purchased for Miss Ghyoor Fatima ICDD PhD Scholar for her tour to Jhang, Bahawalpur and surrounding areas.
3. POL Purchased for Mr. Naqeeb Ullah ICDD Msc Scholar for his Tour to Baluchistan.
4. POL purchased for Prof. Dr. Iqrar Ahmad Khan for his field Research on Datepalm
5. POL purchased for Mr. Sammar Abbas and Mr. Muhammad Suleman for their Field research.

- **travel costs for 1 professor Pakistan to Germany (RC Khan/Bürkert)** (Finance Plan Reference: 3.1.60)

Not availed

#### **3.4 Scholarships<sup>15</sup>**

##### **UAF<sup>16</sup>**

- **2 Stipends for PhD students at Partner Universities (March to Dec) 1st cohort** (Finance Plan Reference: 3.2.13, 3.2.14)
1. Mr. Sami Ullah and Mr. Asif Raza were granted Scholarship from March to December, 2012
  2. Mr. Sami Ullah and Mr. Asif Raza were paid as small research cost.
- **1 Stipend for PhD students at Partner Universities 2nd cohort (March to Dec)** (Finance Plan Reference: 3.2.18, 3.2.19)

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For this section, the required information needs to be supplied by the research cluster holders.

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Please mention the names of the scholarship holders, the titles of their theses (if they are new PhDs) and the period from when to when they received their scholarships. Please also mention if they received any research lump sums, as well as anything else worth mentioning with regard to the scholarship payments.

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Please elaborate on the different positions as explained in the previous footnote.



- **1 Stipend for PhD students at Partner Universities 3rd cohort: Fatima Ghayoor (2 x 500 Euro April/May 12 plus 3 x 500 Euro July until November 12)** (Finance Plan Reference: 3.2.22, 3.2.23)

1. Paid to Miss Ghayoor Fatima Scholarship @ 500 EURO PM from April, May, July, August and September, 2013
2. Paid to Miss Ghayoor Fatima as Small Research Cost.

#### **Research Cluster Bürkert/Schlecht<sup>17</sup>**

- **1 local MSc Stipend (Ms. Aniza) (RC Bürkert)** (Finance Plan Reference: 3.2.27)

1. Paid 100 EURO Per Month to Ms Anisa Naeem from March to September, 2012.
2. Paid 350 EURO to Ms. Anisa Naeem as PhD Scholar for the M/o January, 2013

#### **Research Cluster Hensel/Munir<sup>18</sup>**

- **Stipend for 4 M.Sc students for 6 months (RC H/M)** (Finance Plan Reference: 3.2.33)

As the solar systems have been successfully installed, so four student scholarships are required to conduct research on this project for six months each in 2012.

#### **Research Cluster Khan/Bürkert<sup>19</sup>**

- **scholarship for 1 local PhD (RC Khan/Bürkert)** (Finance Plan Reference: 3.2.48)

1. Paid Miss Ghayoor Fatima ICDD PhD Scholar @ 500 EURO PM as Scholarship for the M/o October, November, 2013
2. Paid Miss Anisa Naeem, ICDD PhD Scholar for Scholarship of the M/o October, November and December, 2013.
3. The remaining amount transferred to the Budget Head 2.5.28 titled Consumables at UAF

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For this section, the required information needs to be supplied by the research cluster holders.

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For this section, the required information needs to be supplied by the research cluster holders.

- *scholarship for 1 local MA (RC Khan/Bürkert)* (Finance Plan Reference: 3.2.49)

Paid To Mr. Naqqub Ullah 100 EURO and Mr. Ali Raza 100 EURO for MSc Scholarship from July to December, 2013

## **Biodiversity and Variation in Nutritional Properties of Pakistani Dates: Implications for Sustainable Value Chain and Decent Living**

### *Overall Research Questions*

- What are the nutritional properties of different date varieties? What are the advantages and disadvantages of different varieties for the farmers?
- How can the shelf-life of dates be enhanced?
- What is the value-chain of date palm products? Who are the key stakeholders and what are the institutions involved in the value chain of dates and other by-products? And how can the date value chain be linked with bio-chemical and nutritional analysis?
- What policy guidelines can be recommended for a sustainable value chain of Pakistani dates?
- What activities should be undertaken by Agri Extension services in the context of sustainable date values chain and decent living for the farmers?
- What is the extent and pattern of bio-diversity of date-palms in different regions of Pakistan?

### **Mr. Naqeebullah M.Sc. (Hons) Student, Plant Breeding and Genetics**

**Title of thesis:** Assessment of genomic diversity of date palm from District Panjgur (Balochistan) by nuclear microsatellites

There are two major objectives of the research;

1. To assess the genetic diversity of date-palm to understand that what are the genetic differences (polymorphism) among different varieties of date palm? and
2. To study the value addition of date palm in Panjgur district of Balochistan.

The student has completed the review of literature and has also made two field visits of Panjgur district. For socio-economic survey, two union councils from Panjgur district were selected and two villages from each union council were selected and 15 farmers from each village were selected. Thus 60 farmers were interviewed for socio-economic survey and value addition of dates in Panjgur district of Balochistan. Qualitative interviews have also been conducted. The data were collected through structured interview schedule. The data about socio-economic characteristics of the respondents and value addition are being analyzed.

Samples of different date palm varieties from Panjgur for the assessment of genetic diversity have also been collected. Microsatellites (SSR) marker technique is being used for assessment of genetic diversity. Currently the student is working on DNA extraction of these samples. So

far a list of 18 SSR primers has been sent for designing which is expected to be designed by the beginning of December, 2012.

**Miss Anisa (PhD student)**

Her research work includes DNA barcoding for distinguishing different species of Palmae. The main aim of the study is to find an appropriate DNA barcode and check the efficiency of barcoding system in Palmae. Second important task was to submit the data in Barcode Data system (BOLD) for further taxonomic use. She has collected thirty-four varieties of *P. dactylifera* and ten species of Palmae from Date Palm Research Station Jhang and University of Agriculture, Faisalabad. These samples were analysed by two barcoding regions, *rbcl* and *matk*.

**Mr. Ali Raza, M.Sc. Hons Students, Agri. Extension**

Mr. Ali Raza is exploring the value-chain of date palm products, key stakeholders and the institutions involved in the value chain of dates and other by-products. One of the key objectives of the research are to recommend policy guidelines for Agri. Extension services and other relevant agencies for sustainable value chain of Pakistani dates and decent living for the date-palm growers. Review of literature is being done by the student and based on the literature review he is refining his research questions and proposal. The field visits of date palm region in Sindh province are planned during December, 2012.

**Miss Ghayoor Fatima, Ph.D. Student (Horticulture)**

**Thesis Title:** Diversity and Nutritional Variation in Pakistani Dates: Implications for Sustainable Value Chain and Decent Living Perspectives of Rural Households

She is studying the morpho-genetic variation of date-palm germplasm in different regions of Pakistan and its affect on the crop's nutritional properties. The effect of soil chemical and physical properties on yield and nutritional properties of dates is also being studied. Finally the link between bio-chemical/nutritional differences in dates and dates value chain will be explored. She is also analyzing the socio-economic characteristics of date-palm growers with focus of livelihoods security.

Household survey of districts Jhang, Muzaffargarh and Rajanpur has been completed. The information about subsistence and sales role of date-palm, date production, livelihoods concerns, perceived quality traits, retail prices and major problems are being collected through the survey. Samples have also been collected for morphological study and soil analysis. Quantitative and qualitative morphological characteristics have been determined from the collected samples. Soil analysis is also being done for physical and chemical properties of soil.

In addition, morpho-biochemical analysis of date palm (*Phoenix dactylifera* L.) germplasm was carried out at Date palm Research Station, Jhang for documenting the important morphological traits of 16 date palm cultivars. The data were collected on the morphological attributes following IPGR date palm descriptor.

#### **4) Cancelled and Shifted Activities<sup>20</sup>**

- **Training in Germany (Ms. Aniza) (RC Bürkert)** (Finance Plan Reference: 3.1.44): Cancelled
- **Travel costs in Pakistan 20 participants (RC H/M)** (Finance Plan Reference: 3.1.48, 3.2.34): Shifted in 2013
- **Travel costs for 1 professor Pakistan to Germany (RC Khan/Bürkert)** (Finance Plan Reference: 3.1.60): Cancelled
- **Marketing material, printing (RC H/M)** (Finance Plan Reference: 2.5.7): Shifted in 2013

#### **5) “Lessons Learned”: Feasibility of Further Activities and Modifications Required for the Following Year (if applicable)<sup>21</sup>**

We were able to take up most of the tasks as planned.

#### **6) Assessment of the Benefits/Use in Terms of Development Policy, the Sustainability and the Public Impact of the Activities Performed<sup>22</sup>**

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Budget Shifts: Please explain any shifts in your budget and why these shifts were necessary.

21

Are there any activities which could be optimized for the following year? And if so: how? Are there any new ideas for the next year of how to optimize processes or introduce new concepts?

22

How did the activities performed contribute to the achievement of the Millennium Development Goals (esp. MDG 1, target 2)? Were transfer instruments like e.g. publications or follow-up projects used to ensure sustainable results and attain public notice? Did the public/the media signal any interest in the activities performed (e.g. interest of government institutions in the Universities ICDD activities, publications, newspaper articles)?

The in terms of human resource development, extending excess to education has been great. About 10 of the ICDD MS scholars completed their theses in 2012. Particularly, the female students benefited more from the ICDD funding. Two PhD scholars would complete their work in 2013. We are able to mobilize substantial third party funding taking lessons from the ICDD sponsored studies on urbanisation, environmental pollution, water pollution, solid waste management, value chain management and solar and bio-energy systems. A bio-energy centre is being setup at UAF. Special initiatives have been taken for the development of peri-urban agriculture for environmental sustainability and employment generation. We have proposed an international conference “Genetic diversity, value chain management and peri-urban development for decent work” to review the progress triggered from ICDD funding.