



**IFAR 2006 Professional Development Program
Completion Report**
[800 words]

Instructions:
Please submit the completion report by email, using this form, through the sponsoring CGIAR Center to ifar@ifar4dev.org within three months after the completion of the fellowship.

Please check if Thalwitz Scholarship **Yes**

Name of Applicant ----- -Amer Ibrahim Basha -----

Sponsoring CGIAR Center ----- Bioversity International -----

I. Work Program goals achieved (maximum length: 200 words)

The project has allowed an in-depth study of the distribution and genetic diversity of *Pistacia* spp. in Syria with 54 sites visited across the country. A distribution map was produced. Specimens were collected from these sites and analyzed using molecular (ISSR) as well as morphological markers. The results showed a large amount of variability both within and between species in the wild populations of *Pistacia* which could be clustered in three main groups which identified the relationship between the different *Pistacia* species. This study confirmed the close relationship between *P. terebinthus* and *P. palaestina* on one hand and *P. atlantica* with *P. khinjuk* on the other. The study also showed that *P. lentiscus*, the only evergreen species, is genetically separated from the above 3 groups. The threats to wild *Pistacia* populations were documented in the study and indicated that much *in situ* diversity is under threat of genetic erosion. The study revealed gaps in the Syrian field gene banks which consist predominantly of cultivated varieties. A complementary conservation strategy was recommended for *Pistacia* genetic resources; to include the setting up of seed and field gene banks for *ex situ* conservation and recommendations for specific area for *in situ* conservation.

II. Plans for follow-up (maximum length: 200 words)

The present study has helped to generate new knowledge on the natural distribution of *Pistacia* in Syria, the phylogenetic relationships among *Pistacia* populations and the genetic diversity in *Pistacia* species, at both the morphological and genetic level. These aspects are essential to carry out successful programmes on both germplasm conservation and use. The results of the studies carried out will be written up and submitted to peer review journals. At least two scientific papers arising from this work will be produced. The work has generated good baseline information about genetic diversity in *Pistacia* in Syria, against which changes in diversity can be monitored over time. The work has also helped to identify a series of research needs including:

- Effectiveness and cost of complementary conservation techniques for *Pistacia*;
- Development of cryopreservation and *in vitro* protocols for safe long term conservation of *Pistacia* species;
- Varietal improvement and breeding programmes using biotechnology techniques;
- Better knowledge of the floral biology including phenology, breeding system and pollination vectors. This is particularly important for the *Pistacia* species which are primary gene pool and have the problem related to protandry.

III. Report budget utilization including whether budget was spent as planned (maximum length: 100 words)

The budget was spent according the proposal budget items, as follows:

Budget utilization			
Item	IFAR	ACTUAL	NOTES
Stipend and subsistence	2,500	2500	
Supplies	3,000	2813	Used to purchase materials for the lab work and for the field work.
Travel	Funds used for 2 trips to University of Viterbo and funds for local travel from awardees personal budgets		
International	2,500	3669	
Local	1,000		500\$ for local travel was covered from awardee's personal budget
Books, journals and equipment (up to \$1,000)	1,000	982	
Monitoring and supervision (staff costs)			Bioversity and Viterbo University cover these costs
Dissemination of information	250	366	
Office expenses, communications	310	225	
Administrative costs¹	440	440	
TOTAL	11,000	10995	

IV. Assessment of the fellowship experience and general comments. (maximum length: 300 words)

This fellowship was a great opportunity for me to undertake this study with international institutions, especially with CG scientists in Bioversity International. The study helped me to gain more understanding of the genetic diversity and relationship between the various wild species. It also allowed me to identify further research needs that will help my institution to further their research work. The major factors influencing the achievements are the good supervision from CG scientists, the very adequate budget to undertake this study and the international collaborations which helped to link with other institutions or universities to undertake the study. The only weak aspect of the fellowship experience is the short time period of this study.

¹ Administrative costs retained by Bioversity