

Report Consultancy Mission Cosimo Frati

Summary of the mission:

EU Delegation in Afghanistan has allocated the consortium ANHDO/RI Afghanistan the implementation of the "Support to the development of the agriculture private sector". The project aims, as part of its specific objectives – SO1, to support the private nursery industry and meet the demand of certified production for the establishment of modern orchards and vineyards.

There is an increased demand for ornamental plants, which is a newborn sector for the private nursery industry. ANHDO/RI would like to assess and support ANNGO in this new economic sector by mobilizing a Nursery Specialist that will provide the technical expertise and inputs required to review the existing Afghan ornamental sector, support the development of pilot action/s, mentor ANNGO and the Nursery Growers and provide them with ornamental techniques and recommendations.

Position Responsibilities and Duties:

During an at least three (3) weeks long visit to Afghanistan starting immediately following the contract signature:

- Revision of the existing document regarding the strategy for the ornamental sector
- Support ANHDO/RI and ANNGO in the revision of the logical framework to fit the ornamental sector development in the strategy of the 2 projects
- Support ANHDO/RI in the mid term evaluation mission with technical advise regarding the ornamental sector capacities in Afghanistan
- Provide guidelines regarding the ornamental sector standards
- Provide guidelines regarding the IPM standards for the ornamental sector

Timeframe:

The consultant Cosimo Frati arrived the 15th of August in the country and he remained till the 3rd of September.

Introduction:

Unfortunately, deteriorated security conditions limited my travels in the country, with no chances to evaluate an eventual improvement in production processes at nurseries' sites. Defining production standards is not a practical operation, nevertheless the assessment at first hand of actual conditions could gave further hints.

The general goal of this document is to let anybody understand that a progress in alive plants production necessarily passes through standardized results. The product must be the most homogeneous possible. Buyers must face lots of strictly similar plants, not showing outstanding differences among them.

To achieve this result, it is fundamental to standardize also the production process. It is preferable, within certain limits, to get averagely upper intermediate quality plants, than a few jolly good specimens surrounded by other individuals with all gradations of qualitative characteristics.

In this prospect, the main purpose is to let growers know that, referring to the same lot (it is not important how numerous), all growing operations must be performed the same way, starting and completing in a relatively short time.

Particular mention must be grant to propagation systems: growers know the traditional way to propagate their varieties, coming from knowledge of local conditions a consultant cannot wholly consider. This is not the venue to debate about propagation methods. It is anyhow the venue to underline the importance to operate the same way, in the same time, with same materials, for the whole propagated lot.

Ornamental Standards

Standard	Rose	Dahlia	Other flowers	Bushes	Forestry trees
Size of the plant	<p>Large flowers: Pot 18 – 20 cm Height 60 – 80 cm Width 30 – 40 cm</p> <p>Multi-flowering: Pot 18 – 20 cm Height 30 – 40 cm Width 20 – 30 cm</p> <p>Climbing Pot 18 – 20 cm Height 150-200 cm Width close to stake</p>	<p>Pot 18 – 20 cm Height 60 – 80 cm Width 20 – 30 cm</p>	<p>Pot 18 – 20 cm Height 40 – 50 cm Width 20 – 30 cm</p> <p>The size of the ready to be sold plant depends on the varieties and species characteristics</p>	<p>Pot 18 – 20 cm Height 40 – 60 cm Width 20 – 30 cm</p> <p>Pot 25 – 28 cm Height 80 – 100 cm Width 30 – 40 cm</p> <p>Pot 30 – 35 cm Height 100 – 125 cm Width 40 – 50 cm</p>	<p>Root ball diameter 30 – 40 cm</p> <p>Clear trunk height 180 – 200 cm</p> <p>Trunk girth at 1m from ground level 10 – 12 cm corresponding to Trunk diameter at 1m from ground level 3 – 4 cm</p>
Shape of the plant	<p>Bush shape Bottomed branches</p>	<p>Bush shape Bottomed branches</p>	<p>Bush shape Bottomed branches The shape of the ready to be sold plant depends on the varieties and species characteristics</p>	<p>Bush shape with bottomed branches, compact not to see through, minimum 2(two) trunks rising from the ground base (main stems)</p>	<p>Straight and undamaged trunk, 3-4 radial branches at height 180-200 cm, balanced crown</p>
Sale features	Healthy looking plants, disease-free, clean trunks and leaves				
Packing	<p>In earthenware pots, plastic pots, light thin plastic pots, phytocell. Protect aerial part from eventual transport damages by using plastic wrapper.</p>	<p>In earthenware pots, plastic pots, light thin plastic pots, phytocell. Protect aerial part from eventual transport damages by using plastic wrapper.</p>	<p>In earthenware pots, plastic pots, light thin plastic pots, phytocell. Protect aerial part from eventual transport damages by using plastic wrapper.</p>	<p>Plastic pots, wrapped root-ball. Protect aerial part from eventual transport damages by using plastic net, or wrapping with a rope.</p>	<p>Wrapped root-ball. Protect crown from eventual transport damages by wrapping branches with a rope.</p>

Ornamental nursery production standards


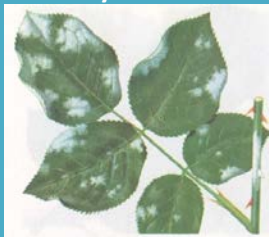
All nursery operations must be performed the most homogeneous way: propagation, pots, composition of growing soil, placing of pots (distancing), irrigation system and timing, fertilizing, pruning, phytosanitary treatments

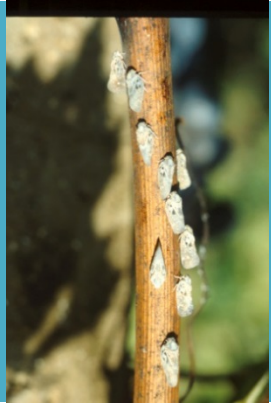
	Rose	Dahlia	Other flowers	Bushes	Forestry trees
Propagation	By half-woody cuttings, 7-12 cm. long, 2-3 buds each, fall or spring time.	Sectioning germinated tuber roots, put in growing wet media during early spring. One section must have one bud.	Annual flowers: by seed. Bulbs, tubers, and rhizomes: by sectioning germinated roots. Pelargonium: by cuttings Jasminum: by summer cuttings of bared mature wood.	By seeds, collected in late summer-fall, and sown in spring. By cuttings, 10-15 cm. long, to be dig in well drained and fertile soil during mid-fall (protecting from frost) or past last frost date.	By seeds, collected in late summer-fall, and sown in spring. By cuttings, 15-25 cm. long, to be dig in well drained and fertile soil during mid-fall (protecting from frost) or past last frost date.
Pot	Use the same kind of pot for the same lot of plants				
Growing soil composition	Required characteristics: steady structure, porosity, water retention, proper pH, parasites free, low cost. Actual available medium: common soil added with mature manure.				Trees grown in open fields: add mature manure to soil when planting.
Pots distribution	Place pots on lines and rows, not touching each other. The distance between nearby pots must be 1/3 to 1/4 of the pot diameter. Each lot must be separated from other lots. Leave a passage every 2 meters, in order to maintain the possibility of reaching by hand any of the pots.				Place plants on straight lines, distancing them equally on the line. Between lines leave space for a man to walk.
Irrigation	Rain irrigation by hand, directly on pots. Flood irrigation around pots base. <i>Advisable: automatic rain</i> irrigation, with well-oriented sprinklers to cover all area, at minimum spray overlap. Distance depending on water pressure. Check by positioning glasses here and there to verify the same quantity of water reach every pot.				Flood irrigation in trenches along trees rows to be left a.s.a.p. Replace with localized dripping pipes.
Fertilizing	First fertilization by mixing manure or slow-release fertilizer to pot soil. Following fertilization by adding prompt release fertilizer on pot soil, during vegetative season, in small quantity, once a month.				Add slow-release fertilizer to soil at the trunk base.
Pruning	Prune after flowering to induce new flowering, and remove old	Prune after flowering to induce new flowering, and remove old unsightly flowers.	Prune after flowering to induce new flowering, and remove old unsightly flowers.	Shaping pruning reducing sprout length, forcing to spruce other buds, making more compact shapes	Pruning on crown, hardly reducing branches length in order to shape a compact, well balanced, round head

	unsightly flowers.				
Disease treatments	Treatments at need, to be performed promptly, in one only operation, reaching the whole lot of plants.				
Timing	Any operation carried out on the same lot of plants must be performed in a definite and relatively short time period				
Weeds	Remove manually weeds from pots, at need.	Remove manually weeds from pots, at need.	Remove manually weeds from pots, at need.	Remove manually weeds from pots. Remove manually or mechanically weeds from between the lines.	Remove manually or mechanically weeds from between the lines.

Common disease of ornamental plants

Afghanistan territory is very large, showing many climate conditions, and it is not simple to resume the main diseases on ornamental plants. Mentioning only four common health trouble, it is meant to indicate briefly a few widespread sickness-causing organisms, not to be underestimate in order to achieve a healthful and pleasant product.

Disease name	Agent	Symptoms	Damages	Control	Times
Aphids 	Aphis spp. Myzus spp. ...	Presence of insects on vegetative apex, new leaves warped, presence of honeydew, presence of black sooty mold.	Sap subtraction, plant weakening, reduced grow, unhealthy appearance,	Pyrethrum based mixtures (Deltamethrin, cypermethrin) acting by touch or ingestion, amount as per instructions. Systemic products only at severe attacks.	At first vegetative growth as preventive measure, on most susceptible varieties. At sight of first insects on other varieties. Systemic products never during flowering, since they can kill pollinators.
Powdery mildew 	Oidium spp. (fungi from ascomycetes family).	Presence of powdery white mold, in enlarging spots, on upper leaves pages, then apexes, buds and flowers.	Growth slowdown, deformation of buds and flowers, unhealthy appearance, plant total mold covered (removal).	Preventive measures: stock plants in ventilated and sunny sites, placing them distanced. Sulphur + copper based products, derivate of triazole and benzimidazole, amount as per instructions.	At first vegetative growth as preventive measure, on most susceptible varieties. At sight of first spots on other varieties.
Whitefly	Metcalfa pruinosa	Presence of insects on various parts of the plant, presence of honeydew, presence of black sooty mold.	Sap subtraction, plant weakening, reduced grow, unhealthy appearance, presence of wax, sticky stems	Wash with water + potassium nitrate 440 g/hl. Pyrethroids can be used for severe attacks.	Washings just before adult insects appear (May). Juvenile figures with limited mobility fall down.



Mites



Presence of insects on the ground and various parts of the plant

Removal of seeds, nursing of aphids. Aphids (and occasionally also whiteflies) honeydew is used as food by mites. Mites distribute aphids' eggs near buds. Not-eaten honeydew is colonized by black sooty mold.

Grow repellent plants (Lavandula, maggiorana, assenzio...) inside the orchard, better in perimeter borders. Cypermethrin

All over the year, at insects appearance.