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| **Info-Tech** | **1) Zones and Definition** |
| Beles (*Opuntia Ficus Indica*) | Agro-ecological zones: Bereha and Kola.An introduced but widespread and drought tolerant perennial shrub from the cactus family, growing 3-5 metres in height, with edible fruits. When uncontrolled, it creates dense and impenetrable thickets. |
| **2) Objective** |
| Use as live-fence (hedges; please see *Infotech Live Fences*) for the protection of productive and/or rehabilitated land as well as homesteads combined with the production of edible fruits and pads (flattened stems called cladodes) for fodder. Also used for erosion control. Sale of fruit and cladodes can generate additional cash income. It is well-suited for erosion control because its roots are deep and strong. |
| **3) Suitability and Adaptability Based upon Local Knowledge** |
| For areas with more than 200mm of precipitation per year, best between 200 and 400mm. Suitable for rehabilitated land with most types of soil however, must be well-drained. Does not withstand excessive flooding or waterlogging. Not suitable for saline soils.Its growing does not demand any deep knowledge, therefore suitable for (agro-)pastoralists with limited or no farming experience.  |
| **4) Target Beneficiaries** |
| Individuals, cooperatives or user groups. Beles fruits are commonly sold by women in many areas, making Beles production suitable as income generating activity for women. Labour for Beles cultivation can be shared between men and women. |
| **5) Yield and Market Demand** |
| Fodder production from cladodes under low-input systems is cautiously estimated between 5 to 6 tons of dry matter per hectare and year. Beles fruits are seasonally found on some markets, though imported from the highlands. There is no market for dried cladodes yet. |
| **6) Periods and Phases of Implementation** |
| Planting from the beginning until the middle of the rainy season. Fruit can be harvested for the first time 3 years after planting. |
| **7) Planning and Implementation Arrangements** |
| * See *area closures and live fence Info-techs* for detailed planning steps concerning community organisation;
* Assist in negotiating community contribution (at least 50 %);
* Training of beneficiaries on Beles establishment and management;
* Agreement with beneficiaries - on plot location and their inputs for Beles establishment and management.
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| **8) Work Steps and Input Requirements** |
| * Assist in organising the preparation of planting material: complete and healthy cladodes cut from live plants. Cladodes must heal and dehydrate for at least 2 weeks before planting. Use only cladodes without discolorations or soft spots (bacterial soft rot).
* Assist and supervise planting. Technique:
* Three land preparation options for first establishment: 1) Ploughing with a depth of 60 - 80 cm, in order to ensure a good drainage. 2) Cross ripping of soil by hand with a chisel to improve drainage and avoid alteration of soil profile. 3) In sandy soils and soils free from weeds, pre-planting operations could be restricted to single shallow holes;
	+ Upright position: Cladode is buried in the ground down to two thirds of its size;
	+ Flat position is used to avoid rotting in case of high soil moisture content. The cladode is kept in place by putting a small stone or a handful of soil on top of it. Planting distance of 0.5 – 1 m in double row is recommended for live fence establishment;
* Recommended planting distances for live fences can be as low as 30 cm. Contour rows with Beles can be established for erosion control, with Beles plants placed on the upper side of the furrow;
* Twice daily watering during early establishment for root development, but be careful to prevent waterlogging;
* Monitor community efforts of protection of planted Beles from grazing (fences).

So far there are no reliable figures available on labour inputs for land preparation, planting or harvesting of Beles under lowland conditions. |
| **9) Risks, Constraints and Limitations** |
| * Can become invasive if not controlled. Animals disperse seed widely and vegetative propagation has made this species difficult to eradicate;
* Has the ability to out-compete all other vegetation. The invasion process is exacerbated by selective grazing of stock on the few remaining native plants, which eventually results in monocultures of *Opuntia ficus-indica* with a dramatic loss of biodiversity;
* Cladodes must be well cleared of spines before use as fodder
* *Opuntia ficus-indica* could be destroyed by cochineal scale insect.
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