

Technical Note No.1

Survival Rate DBC-1 Project Mangrove Restoration Work

Often confusion arises about 100 % survival rate of mangrove restoration work in the Indus Delta Area. When we say we have a 100% survival rate, it does not mean that 100% of the plants that we had initially planted have survived. What it means is that at a particular point in time, there exist the same or a greater number of plants than we had initially planted at the site. While some plants that we initially plant do die, but we immediately replace the failed plants with plants of the same species and the same age/size. In addition to our planted plants, a number of natural seedlings/plants also get recruited in our planted areas as a result of the assisted natural regeneration process. Therefore, in our planting sites at a particular point in time, we have more than the number of plants that are supposed to be there based on our adopted planting density.

As an example, we do initial planting at a spacing of 3 m by 3 m. Based on this planting density, for 100 % survival rate in a hectare of land, we need to have 1,111 plants in a hectare at a given point in time. And we do have this number of plants in a hectare, as we do timely replacement of the failed plants with plants of the same species and age/size. The actual number of plants existing at the site is in fact greater than this initially planted number. For instance, during our first monitoring campaign the minimum number of plants found in a hectare in a 2015 plantation is 3,880, the maximum number is 7,400 and the mean number in a hectare is 5,400. Using this mean number, there are 55,333,800 plants in this planting cohort as opposed to the 11,384,417 number of plants that are to be there in this planting cohort which has an area of 10,247 hectares. Hence, more than the required number of plants exist on ground which are sequestering atmospheric carbon dioxide.

The replacement of failed plants and the assisted natural process have been made possible by the fact that we regularly visit our planted areas and have Mangrove Stewardship Agreements in place under which the planted areas are not only protected but also failed plants are immediately replaced. In addition, our planting and protection activity also ensures that natural saplings also get established due to the earthwork that we do during planting activity on account of which the mangrove propagules have a chance to get established which otherwise would have got washed away back with the receding tide water. Both planted and naturally recruited plants are effectively protected by our Mangrove Stewards.