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A model of success: how ATP is greening the country

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The ecological nadir of the history of Armenia was during the Soviet Era, when barely 8 percent of the country was covered in forests. During the early post-Soviet times, the situation wasn't getting any better as poor families were cutting down what little remained of the forests in order to heat their homes for the winter. This dire situation was the impetus for what became the mission of the Armenia Tree Project – to sustainably green the nation by building back the forests. And a success it has surely been – since it was founded 26 years ago, ATP has planted over 6.7 million trees at sites throughout Armenia, including over 1.2 million through the Community Tree Planting (CTP) program.

Arguably the most important metric for evaluating the success of any tree planting program is the survival rate of the trees. It is well-known that mature trees provide the most benefits to the communities in which they are planted. Good long-term data on tree survival is hard to come by, but fortunately, ATP maintains such a dataset. According to Guy Hydrick, GIS Administrator at the Metropolitan Area Planning Council of Boston and a PhD candidate at Clark in geography studying urban and community forestry, "ATP's community planting dataset is an extraordinary resource, which constitutes a larger sample of tree mortality than collected by any previously published study, and larger than most by several orders of magnitude magnitude."

The CTP-specific data from this dataset is summarized in Table 1 below. What can be seen is a remarkable improvement in tree survival from the early days of the program through to the most recent period, increasing from a mere 40% survival rate to an amazing 83 percent long-term survival rate.

	No. of trees planted	No. of trees that survived	Survival rate
1994-1998	140,671	54,955	40%
1999-2003	132,716	89,991	68%
2004-2008	289,249	218,355	75%
2009-2013	249,500	363,380	69%
2014-2020	**381,065**	**316,395**	**83%**
TOTAL 1994-2020	1,327,160	941,718	71%

Table 1. Tree Survival rates (in five-year ranges) and total survival rate in ATP's CTP program. Note that the most recent data ranges span more than 5 years.

So what accounts for the success of ATP's Community Tree Planting program? There are six components, which I call the Six Elements of Success: Seeds, Site Selection, Science, Society, and Scholarship.

The foundation of success starts with seed and seedling selection. According to Hasmik Khurshudyan of the National Agrarian University, seedling quality is critical to ensuring high long-term survival rates. As Armenia has many different micro-climates, it is also important to select seeds and seedlings that are suitable for a given climatic zone. In addition, planting a variety of climatically suitable seedlings in a given location will help maintain the area's biodiversity and resilience. In line with this, ATP only works with indigenous plant species and species which have adapted over centuries to Armenia's climatic conditions.

ATP has a long queue of requests from communities across the country for tree plantings. In order to select the best locations for the long-term survival of the planted seedlings, the following criteria are used:

1. Human Factor – Is the community in which the trees will be planted ready and willing to care for them?
2. Security – Are we able to secure the site using fencing to protect the trees from grazing animals?
3. Soil Composition – Is the soil rich with nutrients and minerals to support healthy growth?
4. Water – Is water available and accessible or can it be provided affordably via an irrigation system?
5. Community Land – Is land available that is accessible to the entire community?
6. Climate – Is the community situated in a climatic zone that is suitable for the long-term health of types of trees we wish to plant?

ATP's tree propagation and planting techniques are essential to the high survival rates of its CTP program. This all starts at its nurseries, which are decentralized around Armenia in order that the seedlings start their life in a similar climate as to where they will ultimately be planted. These nurseries use greenhouses with modern irrigation systems, netting and suitable plant containers, all of which help improve the survival rates of the planted seedlings.

Plants receive water through a high-tech automated drip irrigation system, either through an individual drip emitter or weeper hoses. This system reduces weed growth thereby increasing the percentage of seedlings that survive. Netting is used in an increasingly large part of the nurseries, which serves to protect the seedlings and workers from the harsh elements of nature. ATP has plans to continuously expand the use of these and other technologies in order to improve seedling quality and thereby survival rates.

Partnering with the communities we work in is critical to the success of ATP's CTP program. Building relationships with community leaders is the first step. According to Alexsandr Mirzoyan, a monitor for ATP's CTP, "It's also the most challenging part of the job…Whoever we entrust in the community must realize the importance of the work we're doing and be ready to take on the responsibility for the trees." Fortunately, once a good relationship has been established, the job becomes easier. This is because the communities quickly realize the benefits. For example, fruit trees that are planted provide fresh produce which families can consume, preserve or sell as they see fit. This has a significant positive impact on the community's economic independence and sustainability, thereby creating an incentive for community members to maintain the trees and improve survival rates.

Following planting, ATP Monitors, such as Mr. Mirzoyan, conduct follow-up visits to the communities. This is especially important for newly planted sites and those that are less than one year old, to ensure that the trees take root. During these visits, ATP Monitors also obtain feedback from community caretakers about such things as replacing trees or the need for additional ones. During these visits, ATP Monitors also train the community caretakers in the skills they need to manage the plantings on an ongoing-basis. Careful and frequent monitoring and communication with community caretakers are critical to the long-term survival of the planted seedlings during the vulnerable early stages of growth. If the caretaker in a community is no longer able to be a part of the program, ATP will go back and find a suitable replacement so that the continuity of the program is maintained for the benefit of the community.

One of Armenia's ambitious goals is to increase its forest cover by 50% by 2050. ATP's work over the past 27 years has gone a long way towards helping to achieve this goal. As ATP expands its reach, fosters stronger relationships with the communities that it serves and increases the adoption of new growing technologies, tree plantings and survival rates should continue to increase. Armenia is poised for a green and sustainable future that benefits its diverse communities.

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