

Research

# Navakiranam- A Novel Program in Kerala, A Win-Win Strategy for Biodiversity and People Through Voluntary Relocation

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**Abstract**

Human-wildlife conflict, deterioration, and degradation of forests due to the presence of people and their livestock are a burning problem in our country. In tandem is the disaffection of the people living within forest hamlets due to poor access to education medical facilities, modern amenities, etc., especially due to a lack of financial capacity and requisite skillsets to relocate outside the forest.

The Navakiranam program is a Kerala government-sponsored program that provides financial support as well as social handholding for people within forests of Kerala to voluntarily relocate outside forests to gain access to a better life for themselves and their children. While supporting people, the program also provides ecological restoration to the vacated forests making room for biodiversity and wildlife to flourish.

The Navakiranam program is a win-win project for people and forests, being successfully implemented in Kerala, which also needs to be scaled and replicated in the rest of the country.

**Keywords:** Biodiversity, Forest ecosystem, Tiger reserves, National parks, Wildlife sanctuaries, Western Ghats, Dwelling communities, Human-wildlife conflict

**Introduction**

Western Ghats is a megadiverse region that is home to the largest wild population of Bengal Tigers and the Asian elephants in India, in addition to being home to thousands of other rare and endemic species of flora and fauna. The landscape is the headwaters of all major peninsular rivers in India, ensuring water security for the region. The Western Ghats, therefore is not only important for India but also holds immense value for the world, due to which it has been recognized as a UNESCO heritage site. The Western Ghats are also home to millions of people, many of whom still reside inside forests and protected areas. It is estimated that presently there are 10,976 households present inside Protected Areas (PAs) of the Western Ghats in the states of Karnataka, Kerala (Wayanad Wildlife Sanctuary), and Tamil Nadu (Mudumalai and Sathyamanglam Tiger Reserve). While Western Ghats is known for its biodiversity as well as rich cultural heritage, the landscape has experienced a spurt in economic and infrastructure development in the past few decades. This is causing large-scale fragmentation, loss of ecological value, and negative biodiversity impacts, which are also negatively impacting the human populations outside the forests due to a loss of ecosystem services. The communities living inside the forests of the Western Ghats feel isolated and marooned, especially the younger generation who are eager to partake in the benefits of economic development, and desperately seek better lives and a good future for their children outside forests. They seek better livelihood options, healthcare, education, and access to basic facilities like electricity, public ration shops, etc. Many of the younger generations of these forest-dwelling communities have already started migrating out of the forests at great personal and financial loss without any support from the Government or other organizations. There have been many instances where parents send their children out of the forests to

live with their relatives in the hope of a better future through improved education and livelihood opportunities. However, many of these children are either badly treated by their relatives or end up working as laborer's in the towns and cities. In addition to the lack of proper facilities inside the forests and the associated social issues, the forest-dwelling communities also live in constant threat of human-wildlife conflict. There are numerous examples where such forest-dwellers have lost their lives or have been gravely injured during incidences of human-wildlife conflict while carrying out simple, daily-life activities such as using toilets, collecting forest produce, etc.



*Figure 1: An elephant walking through an agriculture farm (Pic. courtesy Ashwin Bhat)*

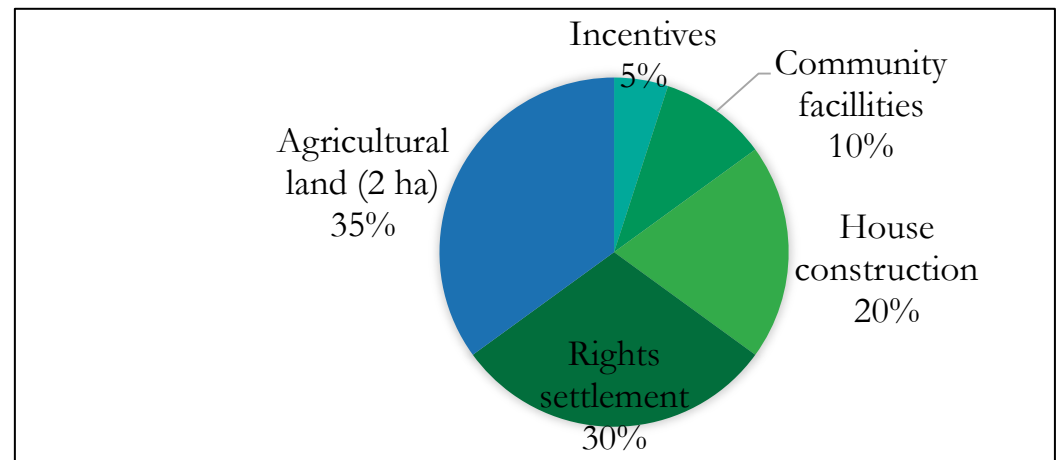
Often forest-dwelling communities continue to live in the forests facing huge adversity due to the lack of financial opportunities, education, and awareness, as well as the fear of the unknown, even though they wish to go out and are desperate to seek a better life. They ultimately become a prisoner of their circumstances and continue living a sub-par life inside the forests often against their will. In their pursuit of better education for their children as well as to escape human-wildlife conflict, the forest-dwelling families take loans from money lenders and become indebted for life. These circumstances limit their ability to exercise their democratic right to a better life. Taking cognizance of this issue as well as safeguarding the wildlife and natural habitats, the Government of India introduced the scheme of voluntary relocation wherein they provide support to such forest-dwelling communities to move out of the forests and start a new life. This process is entirely voluntary where people give their free consent. Voluntary relocation is a social welfare scheme being offered by the government that allows such forest-dwelling communities to seek a better life, who otherwise have been disenfranchised and disadvantaged for generations.

### **Centrally sponsored scheme for voluntary relocations from tiger reserves, national parks and wildlife sanctuaries**

The Government of India has an ongoing scheme of voluntary relocation under the National Tiger Conservation Authority for Tiger Reserves and the Centrally Sponsored Scheme- Development of Wildlife Habitats for other National Parks and Wildlife Sanctuaries wherein families wishing to voluntarily relocate from Critical Tiger habitats (CTH) and Critical Wildlife Habitats (CWH) are supported for voluntary relocation by financial support of Rs. 15 lakh per family.

The Ministry of Environment, Forests and Climate Change (MoEF&CC) schemes under the National Tiger Conservation Authority/Integrated Development of Wildlife Habitats' guidelines provide two options for voluntary relocation from protected areas:

- 1) Option I: Only Cash Payment of the entire package amount INR 15 lakh
- 2) Option II: Rehabilitation by FD as per the break-up of funds of Rs 15 lakh per family



Wayanad Wildlife Sanctuary is obtaining funding from the Centrally Sponsored scheme under the Development of Wildlife Habitats and 454 families from the Sanctuary have availed of the scheme and voluntarily relocated from the Sanctuary from 2012 till 2017. In 2023 funding has been received for voluntary relocation for another 246 families from Waynad Wildlife Sanctuary. However, the Central government scheme is restricted to critical wildlife habitats of National Parks and Wildlife Sanctuaries and does not address this need across all forest areas.

#### CONTEXT IN KERALA

Kerala is a highly populous state which also has a rich heritage of geological, geographic, and biological attributes which make the state unique. The population census (2011) says that the total population of Kerala is 33,406,061, or 2.76 % of India's population, and at 859 persons per km<sup>2</sup>; its land is three times as densely settled as the rest of India ([Economic Review, 2017](#)). Kerala is one of the most progressive states amongst the Indian states and it ranks on top in terms of overall performance ([NITI Aayog, 2023](#)). The social milieu, highly aware people, and political, educational, and civic development, make this a highly progressive and unique state requiring innovative and focused programs acceptable to the people. Inhabitants living in the forest do not have opportunities for quality education for their children and access to health facilities and amenities. They also suffer from poor communication with the outside world making life difficult especially during rainy seasons. The demand for bringing development to such far-flung and remote areas means further disturbance to forests, ensuing fragmentation, escalating costs, and further hardships to people. This fragmentation leads to the degradation of surrounding wildlife habitats and confines wildlife, increasing the number of incidents of Human-Wildlife conflict, etc. Forest fragmentation is a common consequence of human activities with impacts on habitat connectivity, tree dynamics, microhabitat conditions, and biodiversity. Fragmentation leads to the loss of connectivity among forested landscapes, which is important for biological conservation and biodiversity maintenance. Fragmentation analysis carried out on 20 years time interval in northern-Western Ghats revealed that the area of dense forests in intact forests has decreased from 1985-87 to 2005, this essentially means the loss of quality habitat in the area ([Kale et al., 2010](#)). It is clear that over the years, the interaction between forests and human beings has become quite intense. Kerala being a thickly populated geographical region, there is heavy demand on every available space for settlement and development which has caused insurmountable pressure on natural forests and wildlife. There is enough scientific evidence to show that the long-term

ecological security of Kerala lies in securing and safeguarding its forests and other natural resources. However, at the same time, the legitimate livelihood and development aspirations of the people also need to be addressed. People who are living in and around the forests are under a high sense of insecurity; mainly from landslides, landslips, and other natural disasters apart from the issues of negative human-wildlife interfaces. While damages due to landslides and other natural disasters include loss of life and property, damages due to wildlife are in various forms including damage to cultivated crops, cattle lifting, injury to people, and loss of human life etc. While we discuss human-wildlife interfaces, it also leads to the retaliatory killing of wild animals which could put conservation efforts in jeopardy.

The increase in human population and its consequent demand for natural resources has led to the degradation and fragmentation of forests, the natural wildlife habitats of Kerala. The fragmented nature of the Indian landscape, with people all around, has increased the risk of forest dwellers whenever there is a natural calamity. The State of Kerala is no exception, and the direct impact was seen in the unprecedented calamities in the recent past. Though nearly one-third of the land area of Kerala is under forest cover, a significant portion of this forest area is either already fragmented or under the threat of fragmentation due to human activities such as infrastructure facilities like roads and electric lines.

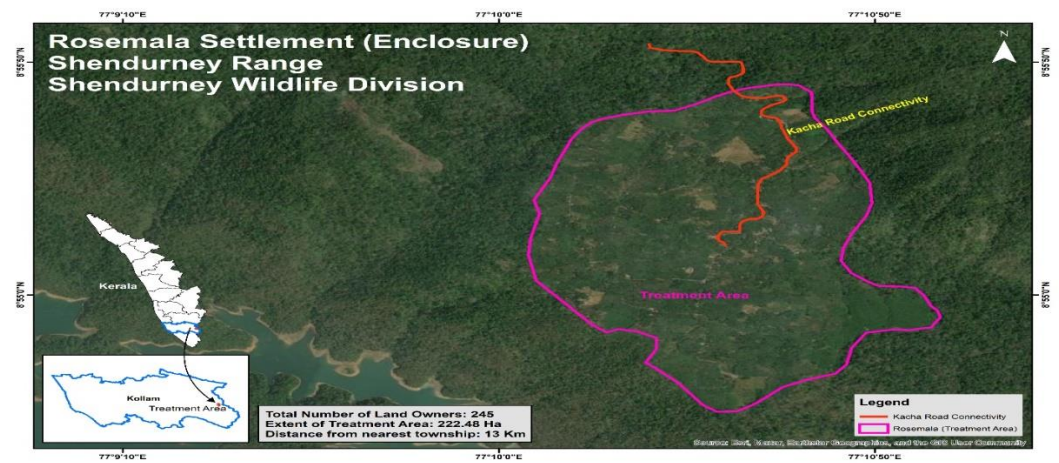
From a developmental perspective, the forest enclosures are in a perpetually disadvantageous position on account of their remoteness, inaccessibility, and scattered existence. It is also pertinent to note that on account of the same reasons, the level of development in such enclosures is significantly lower compared to other settlements or villages outside the forest. The poor reach of rural development programs puts these areas in extreme income poverty and vulnerability. In most areas, even basic human developmental inputs (access to education, justice, energy, healthcare, livelihoods, etc.) are not adequately developed. However, even if one wants to provide such facilities to these enclosures, the cost of bringing development to such far-flung and remote areas would be economically unviable. Moreover, it has to circumvent several legal and technological hurdles too. Besides, normal development in such areas through physical infrastructure developmental activities shall only lead to further degradation, ecological problems, and pressure on forests.

### **Genesis of non-tribal settlements within forests of Kerala**

After independence, under the "Grow More Food Program", many families were settled deep within the forests where they formed settlements. Most of such families were non-tribals forming such settlements deep within the forests. Therefore, in Kerala, there are several human settlements lying scattered throughout the forests which form the core of the conflict between forest management and the developmental aspirations of the people.

An example of how interior forest areas were settled in Kerala by non-tribal settlements can be illustrated by the settlement of Rosemala in Shenderuny Wildlife Sanctuary in Trivandrum. Rosemala is 13 km within the forests from the township of Arayankavu with only a kuccha road leading to the settlement through very difficult undulating mountainous topography.

After the British left, the area in Rosemala was retained by a British citizen. A lady named Roselyn Mummy was his assistant during his visits to his bungalow at Rosemala. On his final return to England, he handed over the whole 699 acres of land to the lady, Roselyn Mummy. Later, Ms. Mummy sold the whole property to a landlord, Mr. Mohammed Kunji Musliar. Musliar leased out the land for agriculture to small-scale farmers. Later, Musliar sold the whole property to the government at a rate of Rs. 400 per acre. In 1976, the government distributed 455 acres of this land to landless people and issued 'patta' for some of them. Thus, Rosemala was settled.



### Need for the project: Navakiranam

This program started after the devastating floods in 2018, when large-scale landslides, mudslides, and loss of human life, dwellings, and livestock were the outcome of the major calamity. What started as an attempt to rehabilitate such impacted families restricted to some pockets impacted by the grievous devastation, resulted in an all-state program where non-tribal families were brought under the fold of a Kerala-funded project under the aegis of Rebuild Kerala Initiative and was called the Rebuild Kerala Development Program (RKDP) in which an amount of Rs100 crore was sanctioned initially for the whole project. The project was given the unique name “Navakiranam”- meaning a new dawn-in 2022 and the project allotment was hugely scaled up to Rs. 290 crore for the project with an assurance for further allocation depending on traction with eligible beneficiaries and utilization of the project and its funding.

### Packages for Relocation

The relocation package was adapted from the model of the voluntary relocation package approved by the National Tiger Conservation Authority (NTCA) for voluntary relocation from villages in the notified core/critical tiger habitats with modifications to suit the field conditions of Kerala. The compensation package under this model provides funding support of Rs.15.00 lakh per eligible willing family vide Government Order No. GO (RT) No.483/2018/PEA dated 14-11-2019.

The meaning of eligible willing family is in line with the NTCA guidelines *i.e.*, the following persons are treated as separate eligible families, even if they currently live together with other relatives within the main family;

Major sons/daughters of the applicant (over 18 years), irrespective of his/her marital status; Physically or mentally challenged person (Son/Daughter/Brother/Sister), of the applicant irrespective of age and sex with at least 40% of disability; Minor orphan who has lost both his/her parent; A widow or a woman divorcee (daughter/daughter in law/sister) of the applicant.

A full package of Rs.15.00 lakh is available for an eligible family having land up to 2 Ha for both resident and non-resident applicants.

In the case of a non-resident eligible family, the compensation is limited to one eligible family, even if there is a major son/daughter, etc. in the family. Many families have already moved out of the forests and left their land behind in the forest. Such families are also supported by Government funding through the Navakiranam project.

In case of land more than 2 Ha in extent, each additional 2 Ha is treated as one residential unit. For example, in the case of a resident family with 2 eligible families and having 3 Ha, the first 2 Ha will be treated as two residential units and the balance 1 Ha as the third eligible unit. If this family has 4.1 ha, it will be counted as the fourth eligible unit.

The cut-off date to decide the extent of land and residential status is 14/11/2019, which is the date on which the scheme/fund was finally initiated in the Forest Department by the Government.

## Material and methods

### Methodology for effecting voluntary relocation

The applicant makes an application for relocation on a plain paper to the Range Officer which is examined by a *Range Level Committee*. This Committee calls for all the relevant ownership records and eligible units for the family. These records are examined by a team of the *Land Acquisition Unit* headed by a Tahsildar and a survey team assigned to the Special Officer RKDP. Once the Tahsildar verifies the applications the *Divisional Level Committee* recommends them to the *Regional Level Committee* which is headed by the regional CCF and has members of the Revenue Department and concerned political representatives. Once the Regional Level Committee approves the applications, the Special Officer RKDP allows 50% payment to the applicant on the signing of an agreement between the DFO and the eligible applicant. A month is then allowed for the applicant to demolish their house within the forest and remove their belongings after which the balance 50% funding is transferred to the applicant. All fund transfers are done only through bank transactions to ensure transparency and keep out middlemen.

The whole program is monitored by a *State-Level Empowered Committee* headed by the Chief Secretary and comprising all Department Heads, Collectors, DFO's, etc.

Another unique feature of the project is that the applicant gets to choose and buy their own house or certify that they are shifting to their own home in a township using the funds provided by the Government for voluntary relocation. This is to ensure that the family is not homeless after availing the Government funds and they stay in a township and house of their liking for a better future safe from the hardships they faced in the forests.

Once the vacated land is taken over by the forest department the concerned DFO mutates the land in favor of the Forest Department and notifies the areas as Reserved forest.

### Slow Take Off Of The Project

Once the program was initiated, there was a very slow take-off and by August 2022, only some 150 families in small pockets in Trivandrum, Waynad & Kannur had availed the scheme. The program was on the verge of being wound up when I joined as Special Officer RKDP in August 2022. We took many steps to upscale the project and our efforts were met with resounding success. By July 2023, within a year, as many as 618 families had availed of the project across Kerala. The project expenditure was Rs.75 crore and an area of 132 hectares was added to the forests of Kerala and Navakiranam became an all-state being implemented in all the districts of Kerala.

### Training and Awareness

In July 2022 it was analyzed that one of the reasons for poor uptake of the project was lack of information both amongst the staff as well as the beneficiaries. Added to that was false information being circulated that it was a deliberate attempt on the part of the Government to push out people from the forests. We conducted a massive awareness and training program for all the staff of the Forest Department at every level, especially our field staff. As many as 130 training programs were conducted within the year. Training and interaction were also conducted for various line departments of the projects such as Revenue Department officers, Local Self Government Officers, and Registration Department officers. Awareness programs were organized at potential location sites in the state based on public demand.

### Appointment of Navakiranam Coordinators and Facilitators

We appointed Coordinators from our field staff and facilitators from the community for each voluntary site and provided them intensive training on the importance of the project as well as its implementation to form a strong and effective interface between the community and the Forest Department. They ensured proper information was provided to the communities and ensured and facilitated all the paperwork and other administrative requirements including obtaining requisite documents from Revenue

and other authorities. We understood the massive acceptance of the project when during a public meeting which also had local politicians speaking against the project, the people told them to remain silent and it was their need to avail the project!

### **Skilling of beneficiaries**

We addressed the issue of fear of the unknown and uncertain future by hand-holding the families moving out of the forests. A very unique component added to the voluntary relocation program was providing skills to the relocated families. To help the families assimilate into their new setting, every willing family member is provided skilling from a reputed and recognized agency and the forest department provides a certificate of skilling. The requirement and interest of the beneficiary is obtained and skilling is then provided. The requirement for skilling is obtained in the agreement signed between the DFO and the beneficiary at the time of agreeing to relocation. The Coordinators and facilitators ensure smooth implementation of the skilling component.

Computer applications, tailoring, driving, weed cutting, cattle rearing, electrical, flooring, and plumbing work are the most preferred jobs as of now.





**Figure 2:** Training in tailoring and weed cutting

### **Timely action and smooth transfer of funds**

The Navakiranam project is a difficult project that requires commitment from the staff as it requires honest and unfettered interaction with the people is time-consuming and can often be frustrating.

Once our staff at all levels got involved in the project, we moved as a well-oiled machine and almost every officer worked in project mode across the state. This ensured that applications were obtained and processed in a timely manner. The Finance Department and the RKI secretariat seeing the success of the project provided timely funding which we could disburse in time. This helped the beneficiaries overcome their fear that there will be delays in releasing funds which may impact their lives. The type of coordination and smooth functioning of a project we could achieve is what dreams are made of!

### **Success stories from the beneficiaries**

All 618 families who relocated voluntarily by July 2023 have given their feedback and their satisfaction in availing of the scheme. This can be read in our coffee table book, the link to which is given below. A few cases are illustrated below:

#### **Karunakaran Pillai**

Karunakaran Pillai lived in the interior forests of Vatakarikakam in Thiruvanthapuram. A river divides the forest and the main town and there is no bridge between the forest and the main road. There is no connectivity during the rainy seasons and his daughter could not go to school. To add to his problems, agriculture, and personal safety were badly impacted by the presence of wildlife and resultant conflict.

The family availed of the scheme and received 2 units amounting to Rs. 30 Lakhs. Using this he bought 10 cents of land and a house in the township of Mylamoodu, Kulathupuzha.

The family says that after relocating they now sleep peacefully without fear of wildlife attacks, and have easy access to education and medical facilities.

#### **Thankaswamy**

He was staying miserably in Rosemala with his autistic son. He could not give ample medical assistance to his son owing to the poor transport facilities. He obtained two units (30 lakhs) including one subunit for his son. He has then been able to buy 6 cents of land and a home at Punalur for 20 lakhs. The remaining 10 lakhs have been deposited in a bank for the son's treatment. He is so excited about this project as he is now able to give good medical care to his son as medical facilities are now available in the vicinity.





**Figure 3:** Thankaswamy's old house in the forest and his new home in Punalur

### **Philip M A**

He wanted to give his grandchildren better education facilities. When he was in CRP Kunnu, the transportation facilities were very poor. During monsoons, no vehicle could reach the place. Human-wildlife interface was also a grave issue. He obtained **two units (30 lakhs)** as a financial package. He bought 17 cents of land and a new house near Mananthavady, Wayanad. Navakiranam has provided skilling in tailoring to his daughter-in-law and also supported her with an electric sewing machine.

### **Chacko P A**

For John, reaching a nearby hospital and getting the required medicine for his treatment were the greatest hurdles he faced. John had to travel a long distance for this purpose. Crop damage due to human-elephant conflicts had also put his life on a knife-edge. He obtained two units (30 lakhs) as a financial package. He then availed the scheme and is now staying in Kurumbupadam, Idukki in a rented house. He is in the process of buying a new house



**Figure 4:** Chaco's old home in the forest

### **Santosh. G**

Santhosh and his family lived deep within the forest and had to walk through a swamp to reach the main road to buy daily necessities and also to go to the hospital and for other civic needs. Due to the presence of wildlife in the swamp, no autorickshaw drivers were willing to come through the swamp. Santosh therefore availed the Navakiranam project and received 1 unit with which he bought 15 cents in the township of Navatanchira in Kulathupuzha. Now travel facilities are easy, and his family is happy and at peace.

### **Applications in pipeline**

Applications were pouring in even in July 2023 and as many as 894 applications were in different stages of being processed to the tune of Rs.134 crores. Another 5000 new applications had also been received.

It is understood that the project is going strong and by December 2023, 800 families have availed the scheme and 155 hectares have been added to the forests of Kerala.

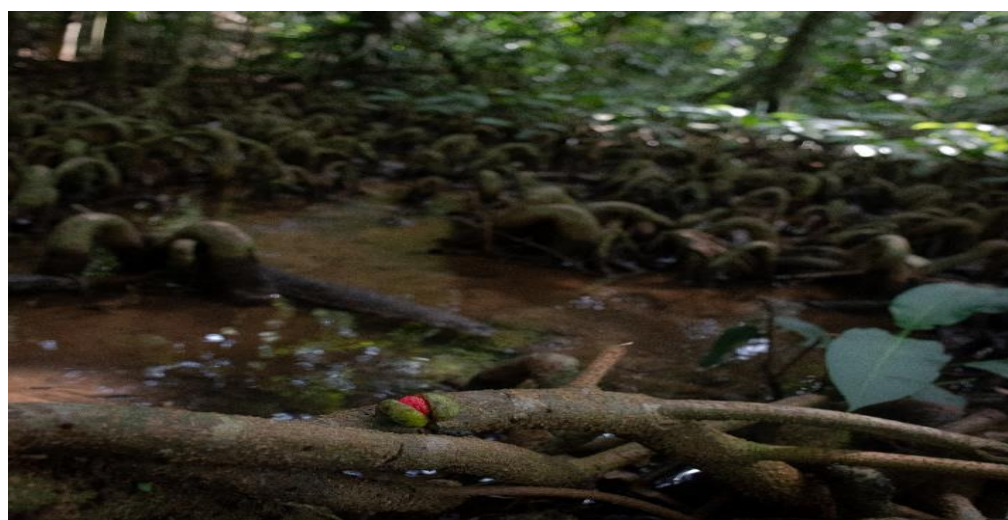
### **Rapid Biodiversity Assessment (RBA)**

While people have benefitted from the scheme, even the forest habitat from where people have moved out has recovered. Rapid Biodiversity surveys were conducted at 8 sites with the goal of conducting such monitoring and surveys at all vacated sites at regular intervals. Diversity and population estimation is being conducted by laying out sample plots in each case

Rapid Biodiversity Assessments were conducted in Rosemala, Channamala, Dalikkarikkam, Kaithappara, Kodanad, Nilambur, Ottamala, and CRP Kunnu. Biodiversity assessment included the number and species of birds, trees, and invertebrates (Butterflies, dragonflies, and damselflies) encountered. The data was collected and compiled from the above project areas and the findings are presented below.

### **Trees**

The assessment revealed the presence of many fruit trees that play a vital role in supporting a variety of organisms. The rapid biodiversity assessment recorded saplings, poles, and trees of the forest trees. The study could identify and record 47 species of forest trees from the study sites.



**Figure 5:** Myristica swamp in Kolathupuzha

### **Birds**

92 species of birds were recorded from the project areas. Among them, 10 species are endemic to the Western Ghats and two species are coming under the Near-threatened

category of IUCN. The birds of Western Ghats especially those of evergreen forests and adjacent habitats are among the most geographically restricted Indian birds.



**Figure 6:** Long-tailed Shrike

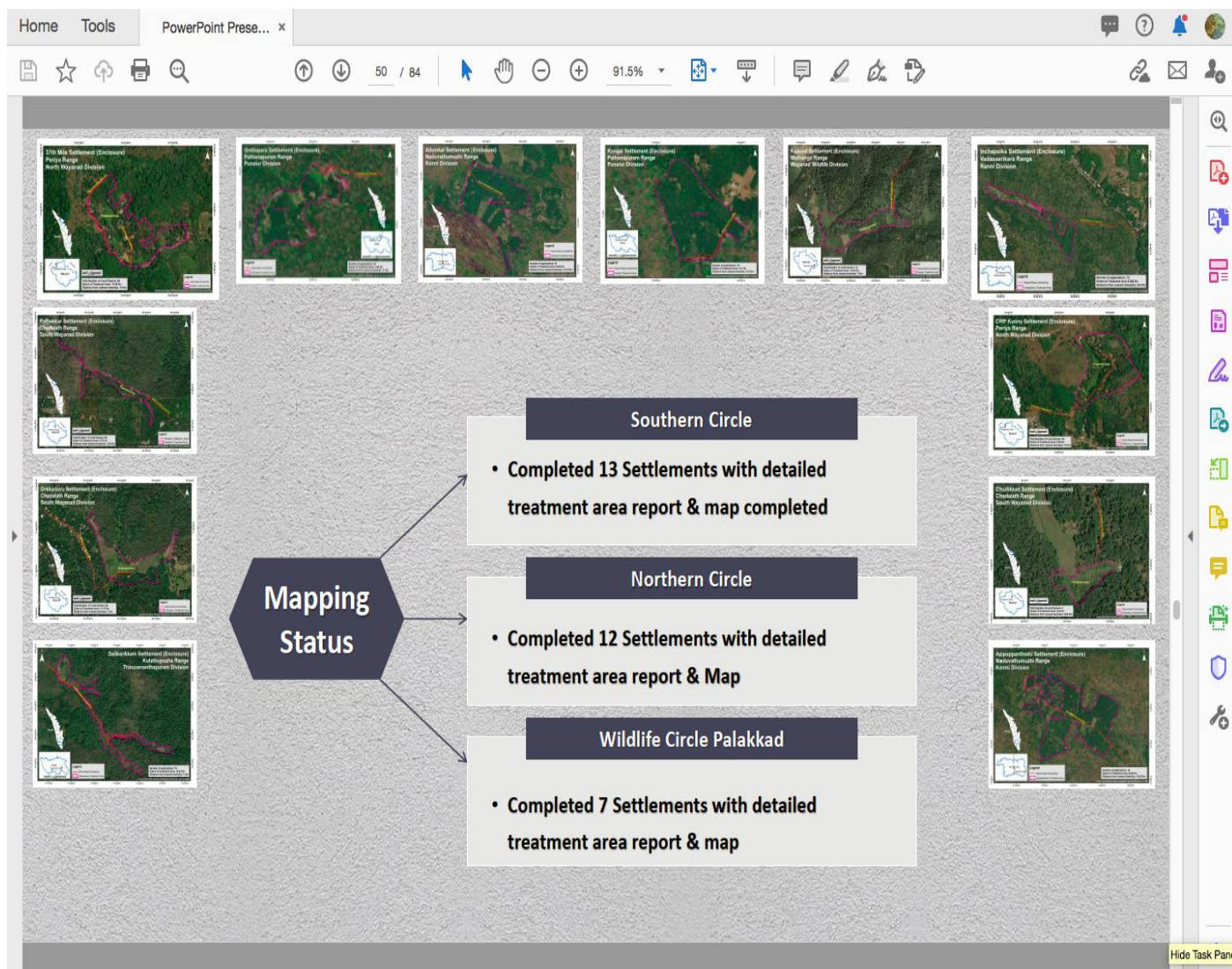
### **Damselflies**

A total of 30 species of Odonata including 14 species of Anisoptera (dragonflies) and 16 species of Zygoptera (damselflies) were recorded from the study area. The Libellulidae was the dominant among Anisoptera followed by Aeshnidae and Gomphidae. Among the Zygoptera, the dominant family was Coenagrionidae followed by Calopterygidae, Chlorociphidae, and Platycnemididae.

### **Butterflies**

The treatment areas are rich in terms of invertebrates and birds. 47 species of butterflies were reported, three species are endemic to the Western Ghats and one is endemic to Western Ghats and Sri Lanka. Butterflies are indicators of a healthy environment and healthy ecosystem. These collectively provide a wide range of environmental benefits, including pollination and natural pest control.

*A biannual assessment of biodiversity* will be done in these areas and changes in biodiversity will be recorded scientifically on a long-term basis. Sample plots have been laid scientifically for such biodiversity surveys.



**Figure 7:** Voluntary relocation site demarcation and GIS survey

### Navakiranam in the web

A Facebook and Instagram accounts of Navakiranam were launched in March 2023, to give wide publicity and authentic information about the project to interested people as well as beneficiaries to understand and confidently avail the life-changing Navakiranam scheme.

### Scaling of the program

While the project is going strong in Kerala and is an impactful solution for both people and forests, it is essential that the program is funded and given Government support on a long-term basis till every eligible person who wants to avail of the project can do so.

It is also important that this project is implemented in other states to provide benefits to people as well as provide space for our biodiversity to regenerate. This will add green cover to our forest lands and provide ecosystem services and ecological security for our country.

The ACS Forests of Kerala has written to the MoEFCC as well as DoPT in July 2023 to adopt this program and implement this program throughout the country.



Figure 8: Elephants roaming in the forests vacated due to voluntary relocation

### Result and discussion

The Navakiranam program has shown very promising and successful results. The project had poor response in the first few years with only 150 families availing the project from 2019 till 2022. However, the situation changed in August 2022 after massive training programs were conducted for forest, revenue, and registration department staff as well as awareness programs for potential beneficiaries. Appointing coordinators and facilitators, from the Forest Department as well as the participating forest villages brought a close interface between the department and beneficiaries which built confidence in the people and ensured large-scale participation of people in the project. Introducing the skilling component further gave a fillip to the program. By July 2023, about 750 families had benefitted from the project, while some 800 applications were at advanced stages of scrutiny and sanction and another 5000 new applications had been received from across the state.

Recovery of the forest habitat was also recorded with elephants, other wildlife, and birds occupying the vacated forests as well as recording of regeneration of forest species.

Long-term assessment will reveal the ecological and social impacts of the project which appear very promising from the baseline assessment that has been done.

### Conclusion

The Navkiranam program is an excellent program of the Kerala Government which is successfully addressing the needs of people marooned within forests as well as the requirement of large tracts of inviolate forests for biodiversity, wildlife as well as ensuring ecological security for people while ensuring smooth flow of ecosystem services. The project will effectively address issues of human-wildlife conflict, regeneration of forests, and even forest fires.

However, to be truly effective, there needs to be massive, focused, and long-term funding for the program within the state. Further, the project needs to be implemented on a vast scale throughout the country on a long-term basis to show impactful results and ensure the reduction of ills that face our forests due to the very complicated and extensive interface between people and forests with their wildlife.

Governments need to make this program a priority and fund the project as well as give it the recognition, importance and focus it deserves.

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