



## **DANGKU LANDSCAPE PROTECTION**

### **Empowering Stakeholders Through Awareness Raising and Multi-stakeholder Patrolling**



**Final report to 21st Century Tiger**

**Contributors: Ifran Imada, Laura D'Arcy, M. Sabillilah, Gatot, Sulaiman, Dudy Nugroho**

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## A. Executive Summary

Dangku Wildlife Reserve (SM Dangku) is one of the few remaining habitats for the endangered Sumatran tiger in Central South Sumatra. Geographically Dangku region lies in 103°-104°E, 2°-2°34'S and is located in the District of Musi Banyuasin, in the Province of South Sumatra. However, rapid economic development and increasing changes in land use are reducing and degrading forest cover in the area, as forest become converted to production landscapes.

The Dangku landscape is dominated by industrial land uses; oil palm, forestry and oil and gas extraction, interspersed with settlements. Those companies that dominate such landscapes not only have the potential to make major, detrimental impacts on their local environment but they can also take steps to mitigate much of this damage, in particular by working together with other stakeholders to manage the wider landscape as a whole. The direct threats to Dangku and other protected forests, and wildlife in the area have been the dramatically increased driven by the growing numbers of illegal settlers in the region.

Across this landscape, the small patches of high conservation value habitats which remain are essential, not just to the survival of the tiger but also to conserving the rich biodiversity of the area. These stepping stones or corridors between forested areas provide vital connectivity between protected areas, enabling tigers and other wildlife to move safely throughout the landscape. Moreover, reducing human-tiger conflict and ensuring a healthy and viable tiger population, that can continue to be supported by the forested habitats which remain.

However, this vital connectivity is under intense threat, as forests are being cleared for planned conversion for crops, road-building, settlements or unplanned and expanding illegal clearance both inside and outside the designated conservation areas. Under a Memorandum of Understanding (MoU) between ZSL and the Natural Resources Conservation Agency (BKSDA) of South Sumatra, a collaboration management effort has been in operation, for the Dangku wildlife reserve and buffer zones, with the key goal of minimizing direct or indirect of detrimental impact of the Dangku environment and biodiversity.

In order to support ZSL's activities under MoU with BKSDA, 21<sup>st</sup> Century Tiger awarded a grant to ZSL to conduct several activities, which focused in empowering stakeholders, through patrolling and participation, whilst protecting the forest and wildlife in the area, with a core focus being to conserve and protect the remaining Sumatran Tiger population. The aim of this grant was to use the expertise ZSL has gained from their Wildlife Conflict and Crime Response Team (WCCRT) in Jambi and MIST training, to promote collaboration amongst the Dangku landscape stakeholders and foster ownership of protection of this important tiger area, through the establishment of a wildlife protection and patrol team.

Dangku landscape patrolling and protection activities began in earnest in January 2012, the project was designed to focus on five inter-linked priority areas:

- (i) Identify further members of patrolling team from the Dinas Kehutanan Province (District Forestry Dept.), local communities and other stakeholders.
- (ii) Train the team of forestry staff, community volunteer rangers and stakeholders in SMART survey techniques, the use of MIST software and for the BKSDA team management how to use MIST for planning strategic anti-poaching and patrolling activities

- (iii) Design and develop an effective patrol system for habitat and wildlife protection through using MIST.
- (iv) Establish a monitoring protocol for the core conservation area of Dangku, which will then be expanded to include non-conservation areas that are part of the landscape.
- (v) Use of MIST anti-poaching system in the wider landscape scale to feed into provincial level law enforcement and threat monitoring systems.

This report will summarise the progress made in 2012 and outline the plans for the ongoing conservation of the Dangku landscape protection, building on the significant success of the project to date.

## B. Current Status of Work

The five main areas of focus for project activities during this funding period were: (i) To identify and recruit further members of patrolling team, in particular from the communities around Dangku; (ii) Train the team in patrol and survey techniques, including the use of MIST; (iii) Design and develop an effective patrol system for habitat and wildlife protection using MIST including training BKSDA team management on how to use MIST for implementing strategic anti-poaching and patrolling activities; (iv) Establish a monitoring protocol for the core conservation area of Dangku with a view to expanding this to include non-conservation areas that are part of the landscape; (v) Looking at a landscape scale approach to law enforcement by using resulting MIST data to feed into provincial level planning.

### I. Recruiting further members of patrolling team

The patrol team was recruited and formally appointed through SK-Kepala BKSDA South Sumatra (*herein* Sumsel) supported by a 'Decision Letter' issued by the Head of BSKDA SumSel. The patrol team includes ZSL staff, BKSDA staff and is supported by community rangers from the villages surrounding Dangku landscape (Figure 1). Corporate stakeholders have also joined patrols on an *ad hoc* basis, when the patrols included the concessions that they manage. A full list of the patrol team in South Sumatra can be found in Annex 1.

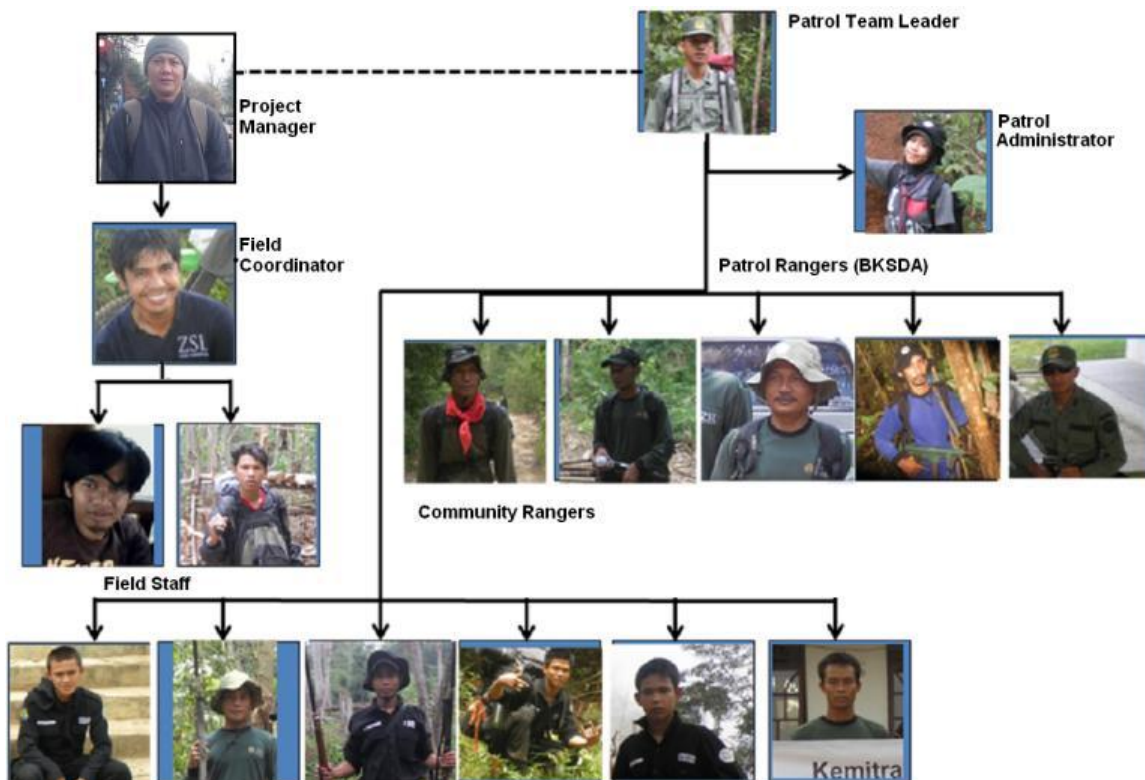


Figure 1. Structure for Patrol Team

Over the course of 2012, each month either patrols or training activities were undertaken, in total six bi-monthly patrols were undertaken. Patrolling was halted for two months, due to a



conflict situation with local villagers arising from illegally logging discovered by the team, which resulted in the hospitalisation of one of the team members. The BKSDA were drafted to deal with this conflict and others across the region, resulting in a much reduced availability of staff to undertake the patrolling with the intensity as previously planned, something which will be addressed next year with the recruitment of more district forestry staff members, with similar jurisdiction as the BKSDA patrol members.

The patrol activities, combined both foot and vehicle patrols and focused on protecting tiger habitat and determine the distribution of tigers present in the area. Field data collected during the patrols included tracks, dung and scratch marks, the location of which was recorded by GPS and then transferred to into MIST. MIST allows the team to identify where to target protection efforts in the SM Dangku area, facilitates the delineation of suitable for future tiger corridors.

A total of 24,000 Ha was covered by patrol team across Dangku, focusing on the north, west and southern areas of the reserve. The team prioritized these areas, by using camera trap data results that ZSL has been collecting since 2010. These data included the location of female tiger, likely to be pregnant, as well as two male tigers believed to be resident in the areas targeted. During a routine patrol in the center of Dangku, the patrol team found female tiger and cub tracks, the female and her cub were subsequently captured by camera traps in 2012, confirming that tigers are breeding in this area. Nevertheless, during their patrols, the team also identified and recorded key threats i.e. poaching, illegal logging, wildlife trap and snares. (See figure 2)

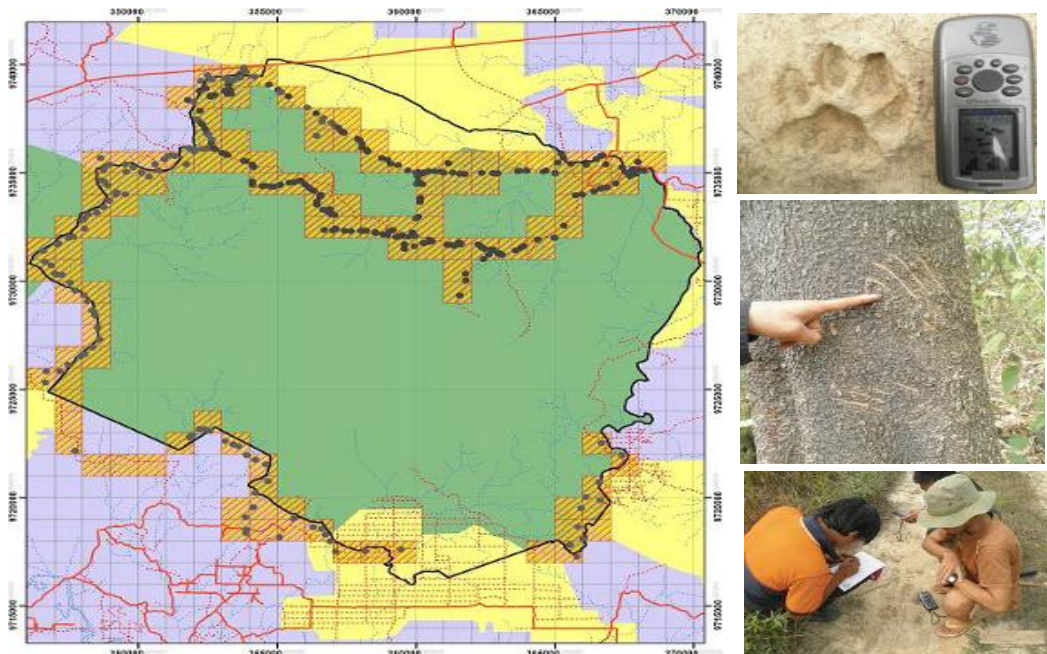


Figure 2. Patrol Route and collection tiger information Left: Patrol efforts on 2012. Upper right: GPS marking for tiger tract. Central right: Identify the scratch of tiger, Bottom right: team identifies more detail with tiger playground (female & cubs).

Each field patrol was conducted over a ten day period, including patrol preparation time, logistics and transportation to the field site. Patrol teams were expected to spend a minimum of five days in field, usually spending eight to ten hours patrolling on foot and covering seven to ten kilometers a day (See Figure 2).

Difficulties experienced in the field included several staff members falling ill during a patrol including several cases of Dengue. Access to water shortages became a problem in the field during the dry season, as several aquifers dried up, this limited the distance and the areas the patrols could cover. Field patrols encountered illegal activities such as illegal land clearance for settlements encroaching into the protected area. On meeting the encroachers, the standard operating procedure of the team involves mediations, explaining to the encroachers about areas protected status, and issuing a formal warning for them to leave within 14 days. Once the encroachers have moved from the area, the patrol team ensures that any materials that remain are removed or destroyed. The BKSDA will then look further into restoring the area or with the rapid response police force look at how to approach moving those illegal settlers who have not moved from the area in the time limit set. Further details of the field patrol activity conducted are shown in Table 1.

Table 1. Annual field patrol activity.

Period	Cover Area (Ha)	Days Patrol (hours)	Key biodiversity				Threats (number)					Follow up Action			Notes
			Tiger	Sumatran tapir	Sun bear	Deer	Encroachment (points)	Poaching	Illegal logging	Fire	Snare	Fined	Warning	Arrested	
Quarter 2 Year 2011	7,200	9 days	3	3	4	3	5	1	9	1	2	0	1	0	1 camp destroyed
Quarter 3 Year 2011	8,100	8 days	8	8	14	9	11	2	24	8	2	0	2	3	3 guns 5 camps destroyed
Quarter 1 Year 2011/12	4,200	6 days	3	1	0	5	4	0	3	1	0	0	1	0	-

## II. Establish a monitoring protocol for the core conservation area of Dangku to be expanded to include non-conservation areas, in the landscape.

A key part of the patrol process, was to share and open up clear communications with major stakeholders in the landscape, these include the palm oil and timber concession in Dangku Landscape and fall under the wider ZSL Dangku project. We have been working with palm oil concession to regularly monitor High Conservation Value (HCV) especially in the northern of SM Dangku, used by the tiger and their prey driven to there because of encroachment in northeast area. This information will also be shared with the District and Province government and with Bappeda (Spatial planning department) to facilitate further updating of their spatial plans for the

area. Each concession was requested to identify the conservation areas they stated in their environmental impact assessment, or high conservation value areas which they have identified in assessment they have undertaken as part of their undertaking of a sustainability standard such as Forest Stewardship Council (FSC) or Roundtable Sustainable Palm Oil (RSPO).

Under current Indonesian regulations timber concessions (*Hutan Produksi*) have to set aside a minimum of 10% of their concession for conservation purpose, palm oil plantations which are members the RSPO which must also set aside areas of High Conservation, forested areas that provide ecosystem services such as watershed so if buffers to rivers are protected and must be conserved.

The participation of these stakeholders in the Dangku patrols, are key in fostering long term and sustainable relationships between the concessions and the protected areas, in turn building a solid framework by which to establish the wildlife corridors across the landscape. Their participation in the patrols will also build the skills and capacity of corporate partners to work with the government to monitor and manage the wildlife and corridor areas that fall under their concessions.

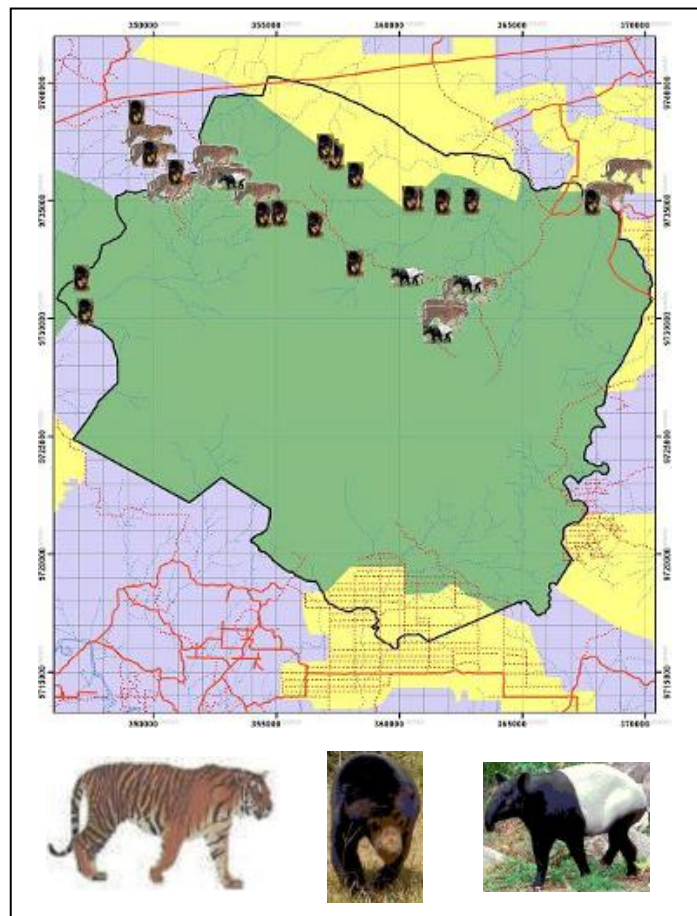


Figure 3. Mapping the endangered species distribution and their home range.



Several coordination meetings and workshops were conducted during this period, which also included the provincial and district levels spatial planning department Bappeda, when corridor delineation was discussed. Currently in South Sumatra there is a push to create a 'one map one for the province, using spatial data and in collaboration with Bappeda South Sumatera, Presidential REDD taskforce and UNDP where the results will discuss with various stakeholder to decide which data sets should be used across the province. ZSL attended the first phase of one map meetings (Figure 12.) as Dangku and Sembilang landscapes and the patrol methods being employed will be used as an example for collecting biodiversity data.



Figure 4. Participation in several workshops to support South Sumatra province

An awareness campaign was conducted for celebrating the Global Tiger Day, with ZSL disseminating information using banners and student classes to provide information and awareness about wildlife trade and trafficking issues (See Figure 13)



Figure 5. Awareness campaign with celebrating Global Tiger Day

### III. Use of MIST anti-poaching system in the wider landscape scale to feed into provincial Level.

The anti-poaching patrols in Dangku landscape, encountered several illegal activities in Dangku Landscape that were identified and recorded in MIST, which were subsequently dealt with by the relevant authorities. Anti-poaching patrols resulted in at two fire arm confiscations and warning issues to 10 poachers or illegal loggers undertaking mammal trapping in SM Dangku. In these cases under their SOP, the patrol teams initially use a 'persuasive approach' with poachers (as long as evidence is not found that they are poaching threatened wildlife), increasing awareness in the poachers about legal status of the animals in Indonesia Law and the importance of wildlife and conservation. Any

traps or snares encountered are destroyed, with notices put up stating Indonesia laws and the penalties for hunting in a protected area and license fires arms confiscated.



Figure 6. Local guns from patrol Left: Persuasive approach by the team. Right: Local guns and bullets



Figure 7. Trap found by patrol. Left: wooded trap for wild pig. Right: electric snare for large mammals

The MIST is an effective way to monitor the distribution of wildlife, forested area and the threats that may exist to them. The patrols have identified threats inside and outside the protected areas, that have a direct and detrimental impact to the habitat and biodiversity of Dangku, therefore to address these threats and mitigate them cooperation between various stakeholders is vital.

The success of the team to date and the effectiveness of the team has resulted in the BKSDA providing further budget to be allocated in 2013, to allow the patrol teams to conduct field patrols. The next stage would be to try to integrate these patrols with the law enforcement activities that the BKSDA and SPORC are undertaking to address the threat of encroachment. Training the wider BKSDA in the use of MIST will be tested as the best approach on how to achieve this.

#### IV. Train the team in survey techniques and the use of MIST

##### *January to March 2012*

MIST training was conducted in early January 2012 in the ZSL office Bogor. The four day classroom-based course was attended by ZSL and BKSDA staff and aimed at increasing the skills

and capacity this staff. This ‘training of trainers’, would produce staff which could train other members of the patrol team in these techniques. The use of MIST as a tool for monitoring wildlife, which uses clear documentation, reporting and analysis, which can then be used to create a dynamic feedback allowing the management to determine appropriate actions to be taken in the field.

This MIST training built upon training was conducted in December 2011, where all stakeholders in Dangku Landscape were trained in the field on SMART patrolling, the patrolling method devised to work in conjunction with MIST. Various stakeholders including corporate stakeholders as well community ranger representing villages around the Dangku Landscape community participated in the training. The training was led by YABI (Rhino Foundation of Indonesia) and WCCRT Jambi. The aim of the SMART training was to increase the knowledge of various key stakeholders in surveying wildlife, wildlife tracking, data collection and the use of GPS in field. Detailed background was provided in the necessity for detailed and accurate collection as well as the methods by which to undertake the correct data collection in the field.



Figure 8. Stakeholder training for Patrol and MIST data collection



Figure 9. Internal training for community patrol

The training also included how to monitor and review performance effectively, such performance evaluation is essential to understanding the team’s motivations and understanding of activities as well as maximizing performance. This is particularly relevant to managing community rangers, who may be undertaking formal work for the first time.



In mid-March, a meeting was held in the BKSDA office attended by BKSDA and ZSL staff. The agenda was to evaluate project activities and progress against the MoU terms of agreement for the first quarter of the year. The strengths and weaknesses of the work were assessed and used to develop the project plan for the next phase (Phase 2). During the same period, a MoU was signed by ZSL Indonesia Country Coordinator, Pak Dolly Priatna and the Head of Sembilang National Park (SNP) Pak Tatang (as show in Figure 4). The new partnership with SNP represents a significant extension of the potential of the wider Dangku project, to establish connectivity corridors between the north of South Sumatra's remaining forested areas, which are vital to the ongoing survival of the Sumatran tiger across the province.

### ***April to June 2012***

Early on in this period, stakeholders met at the BKSDA office to discuss and share information, knowledge and experiences relating to the development of the Wildlife Crime and Conflict Respond Team (WCCRT). This meeting was used to develop the operational scope of this newly established team, and how it could synergise with the patrolling effort already being undertaken in Dangku. The meeting was attended by the BKSDA, TN. Sembilang, WCCRT team from Jambi and ZSL (Figure 5).



Figure 10. Sharing experience and knowledge about Wildlife Crime Conflict and Response Team

As a result of this meeting the BKSDA provided a formal letter to Ministry of Forestry (PHKA) to request a provincial level workshop to create clear standardised guidance for wildlife and human mitigation conflict (Peraturan Menteri Kehutanan No. P48/II/2008). ZSL and Forum Harimau Kita (FHK) were designated to support this with them sending formal letters to PHKA. The WCCRT proposed with three institutional government agency which will be involved and the agencies are Balai KSDA SumSel, SNP and the Forestry Department (Dinas Kehutanan) in provincial and district level of South Sumatra.

### ***July to September 2012***

Building on the WCCRT meeting in May 2012, a workshop was held in July 2012 with key stakeholders including the Dangku patrol team. The goal of the workshop was to provide standardized technical guidance regarding wildlife and human mitigation conflict (Peraturan Menteri Kehutanan No. P48/II/2008). Outputs of the workshop included a formal agreement from all government institutions involved in HTC (Dinas Kehutanan, BKSDA Sumsel and SNP) will develop a wildlife patrolling efforts across SumSel including the Dangku Patrol team and the

Wildlife Crime and Conflict Respond Team (WCCRT) to work together in a unified operation using MIST and the patrol model developed by ZSL and the BKSDA. This workshop also provided the platform for socializing to government and landscape stakeholders the role that ZSL is and will play in facilitating these patrols in the province.



Figure 11. Workshop of Wildlife and Human Conflict

Following the workshop, during the period of Ramadhan as well as an increased occurrence of wild forest fires reduced the numbers of BKSDA staff available to undertake patrols. Patrol members did attend training that ZSL was delivering to BKSDA staff and Sembilang National NP on how to undertake camera trap in field, and analyses the data using presence and absence approach.



Figure 12. Camera trap and the analysis data training

### ***October to December 2012***

Training conducted during this period focused on working with the patrol teams on and other stakeholders on undertaking a Tiger telemetry study in the province. Dr. Dolly Priatna led the training, and the key role the patrol team would play in once the tiger has been collared was agreed.





Figure 13. Training for ZSL staff in setup and using GPS collar for corridor study

### C. Concluding Remarks

1. The multi-stakeholder patrol team has now been established, however the implementation of the patrol activity could not be fully conducted in 2012 due to the numbers of staff in BKSDA South Sumatra available. To address this further staff will be recruited not only from the BKSDA but also the District forestry Department, as well as using MIST to provide clear management schedule. This will now be carried with the phasing out of MIST to the new SMART system.
2. Training was delivered to increase the capacity and skill for ZSL staff, BKSDA, and community ranger from the village community along with integrating the patrol with the new WCCRT/Sembilang National Park. This landscape level collaboration between key areas will need to be further fostered in 2013.
3. Monitoring protocol as well as SOPs have been established and agreed with the patrol stakeholders, but this will need to be reviewed when SMART is established and to integrate it with the new province wide patrol initiative.
4. Anti-poaching patrols have been able to clearly identify the current threats in the Dangku landscape and their context, however there is a clear disconnect between the field evidence collected by patrol activity and the follow up law enforcement effort required to tackle those threats need to be addressed. Therefore much clearer methods of communication and adaptive management techniques must be employed along with time bound transparent agreed upon ways in which to undertake monitoring, reporting and verification of addressing threats encountered by the team.

## D. Expenditure

PROJECT BUDGET CATEGORIES	BUDGET	EXPENDITURE	GRANT REMAINING
<b>In Country Personnel</b>			
Community Rangers	2400	2397	3
Data Entry	700	200	500
Seconded staff	3200	4321	-1121
Seconded staff coordinators	1300	1300	0
<b>Total In Country Personnel</b>	<b>7600</b>	<b>8218</b>	<b>-619</b>
<b>Operations and logistics</b>			
WCCRT Travel and Subsistence	1825	1300	525
<b>Total Fieldwork Operating Costs</b>	<b>1825</b>	<b>1300</b>	<b>525</b>
<b>Training</b>			
Patrol training	800	500	300
Field training	600	450	150
Workshop	500	300	200
<b>Total Training</b>	<b>1900</b>	<b>1250</b>	<b>650</b>
<b>Other Activities</b>			
Coordination meetings	500	350	155
Community surveys and meetings	700	698	2
Reporting Data base	350	200	150
<b>Total Other Activities</b>	<b>1550</b>	<b>1248</b>	<b>307</b>
<b>Total Budget</b>	<b>12875</b>	<b>12016</b>	<b>864</b>

The underspend in this budget will be consolidated to provide up follow up training to the patrol team to undertake SMART software training, a patrol based software that will replace MIST, the use of which will be phased out in 2013. This training was supposed to be undertaken in 2012 but the release of the SMART software was delayed until 2013.