

The Ulu Kalumpang-Wullersdorf Sustainable Forest Management Project

Forest restoration is a specialized form of reforestation, but it differs from conventional tree plantations in that its primary goals are biodiversity recovery and environmental protection. Forest restoration is appropriate wherever biodiversity recovery is one of the main goals of reforestation, such as for wildlife conservation, environmental protection, eco-tourism or to supply a wide variety of forest products to local communities. Forests can be restored in a wide range of circumstances, but degraded sites within protected areas are a high priority, especially where some climax forest remains as a seed source within the landscape. Even in protected areas, there are often large deforested sites: logged over areas or sites formerly cleared for agriculture. If protected areas are to act as Earth's last wildlife refuges, restoration of such areas will be needed. Forest restoration has social and economic functions. It aims to achieve the best possible compromise between meeting both conservation goals and the needs of rural communities. As human pressure on landscapes increases, forest restoration will most commonly be practiced within a mosaic of other forms of forest management, to meet the economic needs of local people.

Since the project started in 2008, the department had destroyed almost 3,500 hectares of illegally planted oil palm which were planted within the reserves. Since then, the degraded areas are being restored through a well planned restoration programme to repair the mistakes and to make the forest ecosystems viable. Our target is to restore 4,298 hectares of encroached area. Since 2008 until 2012, we managed to restore 1,076 hectares at selected restoration areas with suitable tree species. Total area to be restored from

2008 to 2015 is approximately 1,502 hectares. The remaining area, approximately 2,796 hectares, would be restored during the next Malaysian Development Plan. The success of this project depends on the support of the State Government by providing continuous funding of sufficient amount.

Table 25.1 : Restoration Areas

	Location	Year Of Planting	Planted Area (Ha.)
1	Sg. Mantri, 350 Ha. (Ulu Kalumpang FR)	2008	350
2	Sg. Mantri (Ulu Kalumpang FR) – under contract 250 Ha.	2012 - 2015	60
3	Cenderamata Landau (Ulu Kalumpang FR)	2010	600
4	Mt. Forbes & Mt. Sangster Kalumpang FR, VJR107C) – under contract 250 Ha.	2012-2015	14
5	Mt. Wullersdorf FR, 30 Ha.	2012	30
6	Sangster (Kalumpang FR, VJR107C)	2011	22
Total Area Planted as of December 2012			1,076
Target area to be restored until 2015			1,502
Target to be restored for the whole project area			4,298
Remaining area to be restored			2,796

In 2012, five contractors were awarded jobs to carry out restoration activities, as listed in Table 25.2.

Table 25.2 : Contractors awarded Restoration Work in Ulu Kalumpang-Wullersdorf SFM Project

No.	Contractor	Working Area	Contract No.	Contract Period	Contract Amount (RM)
1	The Sign Enterprise	Maintenance of planted seedlings in area of 350 hectares Sg. Mantri, Ulu Kalumpang Forest Reserve	JP/TNKNK-D11/03/2012	Oct 2012 - Oct 2013 (1 year)	530,000.00
2	Pertanian Kondowoi Pemborong Am	Forest Restoration for an area of 250 hectares Sg. Mantri, Ulu Kalumpang Forest Reserve	JP/TNKNK-D11/02/2012	Oct 2012 - Oct 2015 (3 years)	1,735,000.00
3	M.B.A Enterprise	Maintenance of planted seedlings in area of 22 hectares Sangster, Kalumpang VJR107C Forest Reserve	JP/SNKNK-D11/01/2012	June 2012-June 2014 (2 years)	101,780.00
4	Femac Engineering	Forest Restoration for an area of 250 hectares Kalumpang VJR107C Forest Reserve	JP/TNKNK-D11/01/2012	Oct 2012 - Oct 2015 (3 years)	1,471,875.00
5	EZ Enterprise	Forest Restoration for an area of 30 hectares Mt. Wullersdorf Forest Reserve	JP/SNKNK-D11/01/2012	June 2012 - June 2015 (3 years)	231,000
Total					4,069,655.00



(1) Site handing over to contractor, The Sign Enterprise - Project Site : 350 Ha. -Sg. Mantri, Ulu Kalumpang Forest Reserve.(2) Site handing over to contractor, Pertanian Kondowoi Pemborong Am - Project Site : 250 Ha. -Sg. Mantri, Ulu Kalumpang Forest Reserve and (3) Site handing over to contractor, MBA Enterprise - Project Site : 22 Ha. -Mt. Sangster, Kalumpang VJR107C Forest Reserve.



(L) Site handing over to contractor, Femac Engineering Sdn Bhd - Project Site : 250 Ha. -Mt. Sangster & Mt. Forbes, Kalumpang VJR107C Forest Reserve and (R) Site handing over to contractor, EZ Enterprise - Project Site : 30 Ha. -Mt. Wullersdorf Forest Reserve



(L-R) Demonstration on the method of planting of seedlings, fertilizing and poisoning of unwanted weeds in the planting line. Use of PPE is a must in any activities to prevent accident at the work site.

Forest Restoration in Sg. Mantri Area

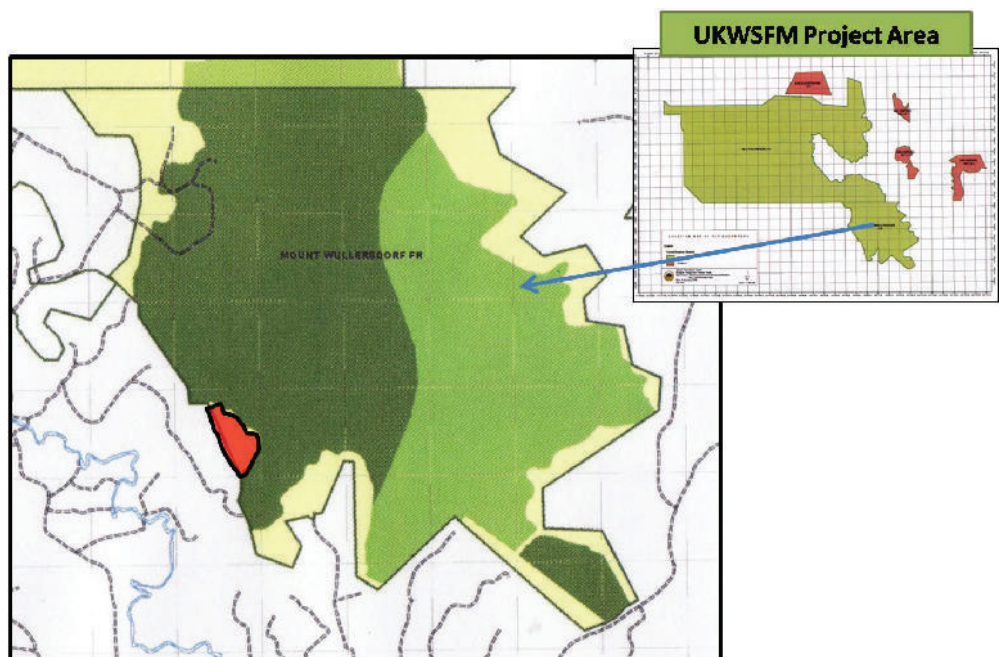
The restoration projects in this area continued during the current year, as per approved AWP. Two (2) companies were awarded via tender, to carry out restoration planting and maintenance of planted seedlings which were planted in 2008 and 2009.

The Sign Enterprise, was given the task to implement the maintenance of approximately 350 hectares of planted area. This contract includes the replacement of dead seedlings within the planted area, clearing of the planting lines and also to fertilize all planted trees with 300 gm of NPK Green.

Pertanian Kondowoi Pembrong Am was awarded the contract to restore a 250 ha area within the selected block within the Ulu Kalumpang Forest Reserve. The contract is for 3 years until 2015. Each year they have to fulfil the targeted tasks listed in the approved work plan. In 2012, they have completed planting the specified 60 hectares area, with various species such as Kapur, Sentang and other selected species. The work specifications within their contract agreement include planting, maintenance and fertilizing of the planted seedlings.

Forest Restoration in Mt. Wullersdorf FR - 30 Hectares

This 30 ha planted area was previously illegally planted with oil palms. In 2010, the Forestry Department had destroyed the oil palm and marked the area for a restoration project. In 2012, the Department had awarded a contract to EZ Enterprise to replant this area in order to accelerate recovery of forest structure, ecological functions and biodiversity. This contract agreement is for a period of 3 years, from June 2012 until June 2015.



Location map of the Restoration Area in Mt. Wullersdorf Forest Reserve.



(Above) Restoration area, in Mt. Wullersdorf Forest Reserve and (right) part of the planting area in Mt. Wullersdorf Forest Reserve.



Forest Restoration in Sangster (Kalumpang VJR107C FR-Mt. Forbes & Mt. Sangster)

The planting activities within this 22 hectares area was contracted out to MBA Enterprise, in 2011 and 2012, to maintain and fertilize the planted seedlings until year 2014. A total of 1,500 seedlings, were planted to replace the dead seedlings.

Forest Restoration in Kalumpang VJR107C FR (Mt. Forbes & Mt. Sangster)

The contract agreement with Femac Engineering will last until 2015. Each year they have to fulfil the targeted tasks listed in the approved work plan. The work specifications within their contract agreement include planting tree species and maintenance of planted seedlings according to schedule given to the contractor which includes fertilizing of the planted trees. Unfortunately, the contractor failed to accomplish the task given due to internal problems within the company organisation. They have only managed to established the nursery to raise seedlings. Their performance will be closely monitored and appropriate actions will be taken if there is no improvement.



Part of the proposed planting area in Kalumpang VJR107C Forest Reserve.

Pictures of planted seedlings within the restoration area



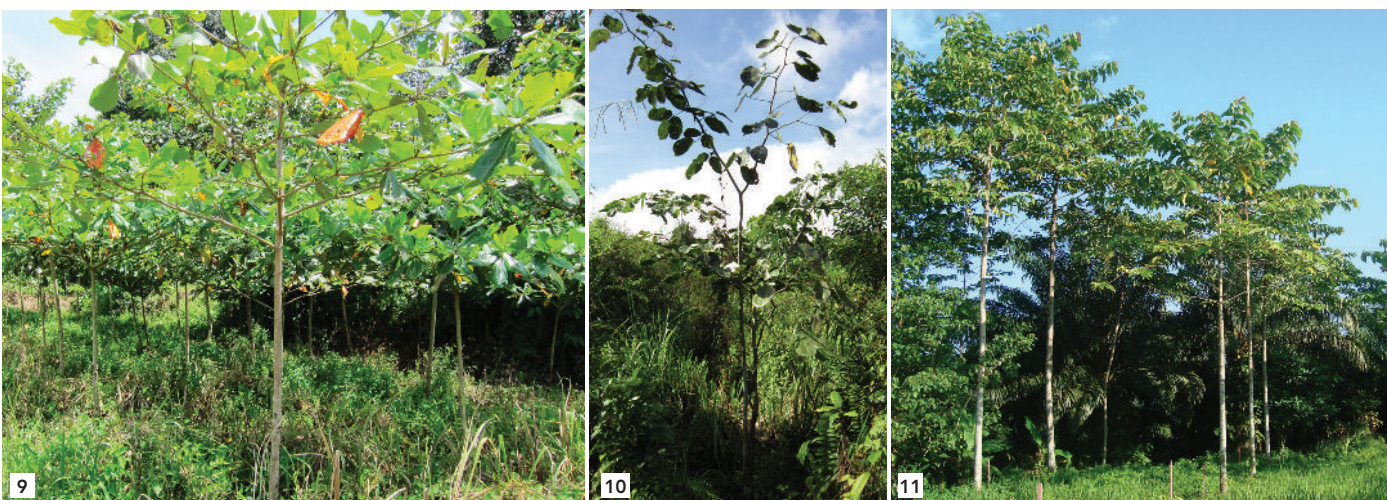
(1) Batai (*Paraseriantes falcataria*), planted in 2011, Location: Sangster Restoration Area, Kalumpang VJR107C FR; (2) Batai (*Paraseriantes falcataria*), planted in 2012, Location: Cenderamata Restoration Area, Ulu Kalumpang FR; and (3) Batai (*Paraserianthes*), planted in 2012, Location: Wullersdorf Restoration Area, Mt. Wullersdorf FR.



(3) Angsana (*Pterocarpus indicus*), planted in 2010, Location: Cenderamata Restoration Area, Ulu Kalumpang FR; (4) Bayur (*Pterospermum* spp.), planted in 2008, Location: Sg. Mantri Restoration Area, Ulu Kalumpang FR; and (5) Bayur (*Pterospermum* spp.), planted in 2010, Location: Landau Restoration Area, Ulu Kalumpang FR.



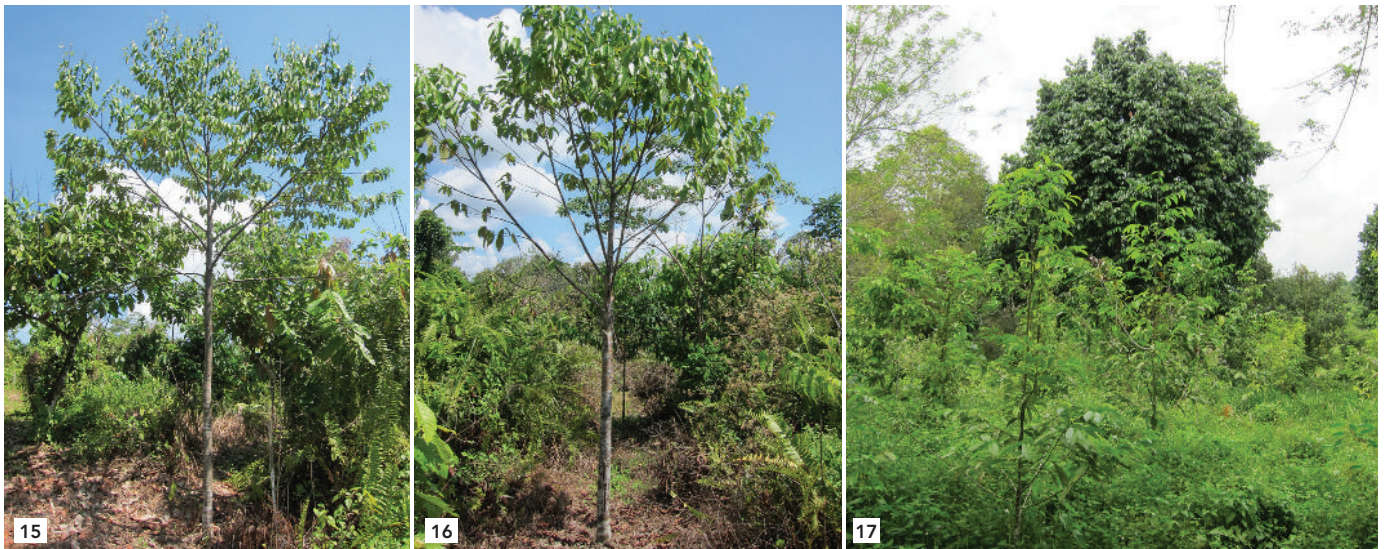
(6) Binuang (*Octomeles sumatrana*), planted in 2008, Location: Sg. Mantri Restoration Area, Ulu Kalumpang FR; (7) *Eucalyptus deglupta*, planted in 2009, Location: Sg. Mantri Restoration Area, Ulu Kalumpang FR; and (8) Kembang Semangkok (*Scaphium* spp.), planted in 2008, Location: Sg. Mantri Restoration Area, Ulu Kalumpang FR



(9) Ketapang (*Terminalia catappa*), planted in 2010, Location: Sg. Mantri Restoration Area, Ulu Kalumpang FR; (10) Merbau Lalat (*Sympetelandra borneensis*), planted in 2008, Location: Sg. Mantri Restoration Area, Ulu Kalumpang FR; and (11) Laran (*Neolamarckia cadamba*), planted in 2008, Location: Sg. Mantri Restoration Area, Ulu Kalumpang FR



(12) Sentang (*Azadirachta excelsa*), planted in 2008, Location: Sg. Mantri Restoration Area, Ulu Kalumpang FR; (13) Seraya Majau (*Shorea johorensis*), planted in 2008, Location: Sg. Mantri Restoration Area, Ulu Kalumpang FR; and (14) Seraya Minyak (*Shorea beccariana*), planted in 2008, Location: Sg. Mantri Restoration Area, Ulu Kalumpang FR.



(15) Seraya Punai (*Shorea parvifolia*), planted in 2008, Location: Sg. Mantri Restoration Area, Ulu Kalumpang FR; (16) Seraya Tembaga (*Shorea leprosula*), planted in 2008, Location: Sg. Mantri Restoration Area, Ulu Kalumpang FR; and (17) Kapur Paji (*Dryobalanops lanceolata*), planted in 2008, Location: Sg. Mantri Restoration Area, Ulu Kalumpang FR.



(18) Kapur Gumpait (*Dryobalanops keithii*), planted in 2008, Location: Sg. Mantri Restoration Area, Ulu Kalumpang FR; and (19) Fast growing “Elephant Grass”, a competitor to the planted seedlings

Forest Rehabilitation - Silviculture Activities in Kalumpang VJR107D (Sapang) and Madai Baturong VJR107 (Binuang) Forest Reserve.

Silviculture is a science of producing and tending a forest; the practice of controlling forest composition and growth. These activities could do a better job for the environment than older trees whose growth have slowed. In this project, the method used is climber cutting. In 2012, only 300 hectares of selected areas within the reserves were treated; 150 hectares in Kalumpang VJR107D (Sapang) and another 150 hectares in Madai Baturong VJR107F (Binuang).



(L-R) Climbers and vines have been cut to release stress and competition to the trees involved.

Wildlife Monitoring Program

Wildlife monitoring is part of the forest management activities. The monitoring result could provide information on the existence and the population of the wildlife. It could also help the forest manager or the Forestry Department to know the population of wildlife in degraded or encroached forest areas. Several methods have been devised and used by scientists or researchers on ways to monitor wildlife in the forest management unit.

In 2012, there was a collaboration work on wildlife monitoring in the project area. WWF (World Wildlife Fund) and Institute for Tropical Biology and Conservation of University Malaysia Sabah had been working together with the department to gather information on wildlife in Ulu Kalumpang Forest Reserve. They monitored closely the existence of Banteng (*Bos javanicus*) and Clouded Leopard (*Neofelis nebulosa*) and also other species. The “Camera Trapping” method was used in their project. This method is for capturing wild animals on film when researchers are not present, and has been used in ecological research in many areas. It can be used to detect rare species and estimation of population size and species richness. A “camera trap” is a remotely activated camera that is equipped with motion sensor or an infrared sensor, or uses light beam as a trigger. This method has a great advantage as it can record very accurate data without the animal being captured.



Setting up the Camera Trap.



Collecting Banteng’s dung for research purposes.



Collaboration work between University Malaysia Sabah and Sabah Forestry Department-UKW’s Project staff.

Through this collaborative work, the researchers managed to capture many images of wild animals which are listed as threatened species and rated as Critically Endangered, Endangered or Vulnerable in the 2004 IUCN Red List of threatened animals still living inside Ulu Kalumpang Forest Reserve. The captured images include those of threatened species, such as *Bos javanicus* (Banteng), *Neofelis nebulosa* (Clouded Leopard) and *Elephas maximus* (Asian elephant), *Hystrix brachyura* (Malayan porcupine), *Macaca nemestrina* (Pig tailed macaque), Palm Civet etc.



Measuring Banteng's foot print

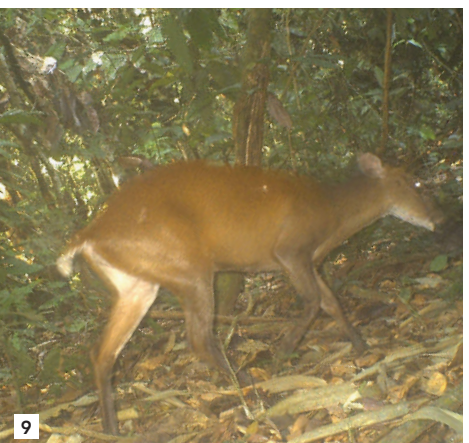
Images from Camera Trap



(1) Banteng (*Bos javanicus*); (2) Pygmy Elephant (*Elephas maximus*); and (3) Calf.



(4) Pig Tailed Macaque (*Macaca nemestrina*); (5) Bornean Sun Bear (*Helarctos malayanus*); and (6) Crested Fireback (*Lopura ignita*).



(7) Sambar Deer (*Cervus unicolor*); (8) Sambar Deer (*Cervus unicolor*); and (9) Barking Deer (*Muntiacus muntjac*).



(10) Clouded Leopard (*Neofelis nebulosa*); (11) Malayan Civet (*Viverra zibellina*); and (12) Banded Palm Civet (*Hemigalus derbyanus*).



(13) Lesser Mouse Deer (*Tragulus javanicus*); (14) Malayan Porcupine (*Hystrix brachyura*)

Forest Protection

This is a vital activity within this project area. Our mission is to maintain and rehabilitate the health of the forest by protecting them from fires, illegal fellers and other illegal activities. In 2012, just a few cases were recorded mainly illegal timber felling by converting the trees into scantlings, or popularly known as ‘bantalan’.

The Chart 25.1 shows the reduction of forest crimes occurring in the project area since the project started in 2006. Forest crime rates are decreasing due to better enforcement and placement of forest checking stations in each forest reserve under the project. Surveillance was done regularly and concentrated in areas where forest crimes are prone to happen.

A new Forest Checking Station was constructed in Mt. Wullersdorf Forest Reserve to serve as a field station to control and prevent forest crimes to occur in the reserve. This project was funded under the Project of Heart of Borneo. Specific activities had been done to secure the project’s area from intruders by setting up gates to close the unwanted access to the reserve, especially the ex-encroachment area. Also erecting signboards to make people and stakeholders aware about the reserve and as a warning to them not to enter the reserve. Maintenance of Forest Reserve boundary was done at selected areas to ensure the fences are clear at all times for the purpose of monitoring and control of the reserve area from any new encroachments.

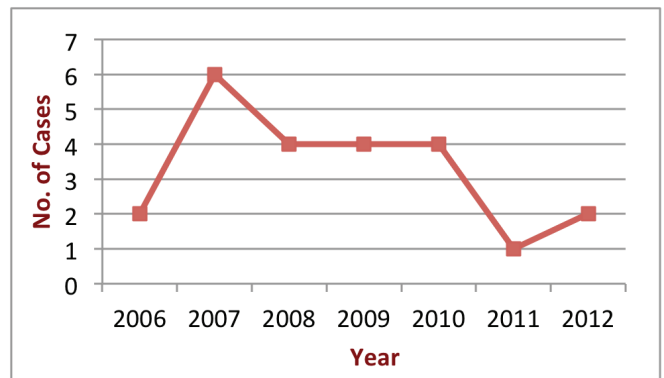


Chart 25.1: Number of cases



FCS in the Mt. Wullersdorf Forest Reserve.



(1)&(2) Closing unwanted access road to the reserve and (3) fixing warning signboards at encroachment area, Mt. Wullersdorf FR.



(4) Fixing warning signboards and (5)&(6) Fixing forest reserve signages.

Pre-assessment for certification



Sustainable Forest Management certification could provide us with independent recognition of our responsible management practices. It is a system for identifying well-managed forest areas. Year 2014 is our target to be certified by the FSC (Forest Stewardship Council), an accredited certification body. In this case, Global Forest Trade Network (GFTN) Malaysia which is part of the WWF's GFTN initiative has been appointed to help Sabah Forestry Department to do the assessment of the project's area. They have done a pre-assessment to the project area in the month of May 2012, to gather information on the ground and to come up with an assessment report. These reports emphasized on what the project should have to fulfil the FSC certification requirements.

GFTN has set up the module and criteria for certification which are listed below. This module and criteria have to be fulfilled by the department or the project manager to get the FSC certificate.

- Module & Criteria for certification
 - (a) Policy requirement
 - Make a public summary of policy statement available at the FMU level
 - (b) Operating Legally
 - Assess the effectiveness of encroachment monitoring
 - (c) Management Planning
 - Prepare Public Summary of FMP (Forest Management Plan)
 - Make available relevant informations from the FMP to stakeholders if requested
 - (d) Monitoring
 - Provide training programme for staff and ensure contractors' workers are equally trained and supervised
 - Carry out comprehensive monitoring within the FMU
 - Conduct monitoring of management activities and analyse results.
 - (e) Training and Capacity Building
 - Identify training needs
 - Assess skills of field staff
 - Formulate a training plan
 - Implement the training plan
 - Develop training modules appropriate to the FMU
 - (f) Waste Management
 - Develop a plan for collection and disposal of waste
 - Implement the disposal plan and monitor its implementation and effectiveness
 - (g) Assessment of Environmental Resources and Impacts
 - Identify all forest environmental resources
 - Assess the environmental impacts of forest activities

- (h) Conservation and Environmental Protection
 - Formulate plans and develop prescriptions to protect and/or enhance the environmental resources and services identified.
 - Conduct training on the protection of HCVF attributes.
 - Increase conservation and environmental monitoring parameters and determine the effectiveness of the mitigation measures
- (i) Health and Safety
 - Identify all operations and activities which involve a safety risk or where safety hazards already exist.
 - Develop plans to ensure that all activities comply with relevant legislation and safe working practice
 - Implement Health and Safety training at the FMU
 - Supervise contractors' compliance to health and safety requirements
 - Document incidences of accidents in workplace
- (j) Workers' Rights
 - Ensure that workers of contractors are able to exercise their rights in accordance to the Labour Ordinance and Employees' Social Security Act
- Assess whether all employees' rights are delivered in practice
- Monitor whether action is being taken as planned, and whether it is adequate in delivering all employees' rights.
- (k) Rights and Needs of Forest Users
 - Record all consultation undertaken with the local communities
 - Initiate the formation of a formal consultative committee
 - Include monitoring of plans and systems involving other forest users in the Annual Compliance Report
- (l) Employment and Local Development
 - Develop plans with local communities to support and contribute to local development
 - Implement the development plan, where appropriate, in collaboration with local organisations or government bodies
 - Assess the effectiveness of the implemented consultation and grievances mechanism
 - Evaluate the effectiveness of the implemented programmes

Pictures on the Pre-Assessment Activities carried out by the WWF GFTN representative, Dr. Yap



Total Expenditure In 2012

The total expenditure incurred by this Project for 2012 was RM2,536,937.37 (excluding salaries and fuel consumption which were paid by the SFD Headquarters). The approved allocation was RM 2.57 million from the State Government under the Tenth Malaysia Plan.

Table 25.3: Tabulated Expenditure in 2012

Restoration Program (1,076 hectares)	RM 1,361,211.25	Implementation and Supervision of AWP 2012	RM 368,478.93
Forest Protection (Enforcement activities, boundary demarcation etc.)	RM 165,997.86	Physical Developments (Three Forest Checking Stations and repair of Kunak Office, and Sg. Mantri Bridge)	RM 209,664.97
Admin Expenses (Field & Office Equipments)	RM 220,730.12		
Gen Set and Vehicles parts/services and maintenance	RM 111,254.24		
Silviculture Activities	RM 99,600.00		
Total Actual Cost			RM 2,536,937.37

Note : Diesel, Petrol and Salaries are not funded under the allocated amount for this project. The expenses are under SFD headquarters.

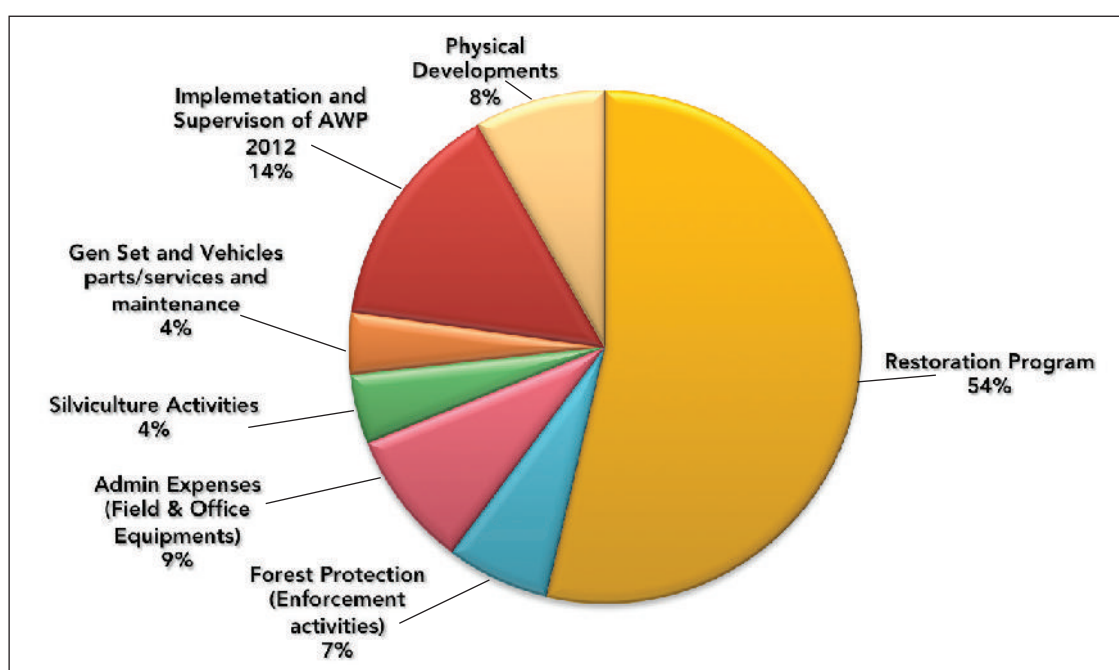


Chart 25.2 : Expenditure in 2012

Total Accumulated Expenditure 2006-2012

The overall expenditure since the inception of this project amounts to RM 11,821,533.45. The allocation comes from the State Government Development Budget under the Ninth Malaysian Plan and this will be continued in Tenth Malaysian Plan, Refer Table 25.4.

Table 25.4 : Total expenditure from 2006 until 2012

Year	Expenditure (RM)
2006	298,886.54
2007	995,614.00
2008	1,994,724.05
2009	2,088,466.0-
2010	2,618,874.51
2011	1,288,030.89
2012	2,536,937.37
Total	11,821,533.45

What was achieved in 2012?

Table 25.5 shows the summarized achievements of all activities for this project in 2012.

Table 25.5 : Achievements in 2012

No.	Activities	Achievements
A. Forest Operations		
1	Air surveillance	Four (04) times (18 hours 55 minutes recorded). To monitor and to get aerial view of project area.
2	Forest protection	1. Ground monitoring with help from special task force "OPS SADANG". 2. Installation of forest reserve signboards along the boundary of Mt. Wullersdorf Forest Reserve. 3. Destroyed 430 illegal bar logs found in Ulu Kalumpang FR and Mt. Wullersdorf FR 4. Construction of one Forest Checking Station within Mt. Wullersdorf FR. Funded by the "Heart of Borneo Project"
3	Road maintenance	Maintenance and construction of forest roads within the restoration areas in Cenderamata, Landau, Sg. Mantri and Mt. Sangster.
4	Establishment of Permanent Sample Plots (1 ha)	1. Three (3) sample plots were established within restoration area in Cenderamata Landau. The average mortality rate recorded was 30-35%. 2. Eight (8) sample plots were established within restoration area in Sungai Mantri. The average mortality rate recorded was 34%.
B. Forest Restoration		
B.1	Sg. Mantri, Ulu Kalumpang Forest Reserve	
1	350 hectares - Planted in 2008 and 2009	First Round Maintenance of planted seedlings by the awarded contractor, The Sign Enterprise. The Contract will end in October 2013.
2	250 hectares - new planting area	60 hectares were planted by the awarded contractor, Pertanian Kondowoi Pemborong Am. The contract agreement will end in of 2015.
B.2	Cenderamata Landau, Ulu Kalumpang Forest Reserve	
1	Cenderamata Landau Area 600 hectares – Planted in 2010	Maintenance completed for the 600 hectares restored area, carried out by the awarded contractor, Ecotend Sdn Bhd.
B.3	Kalumpang Forest Reserve VJR107C (Mt. Forbes & Mt. Sangster)	
1	Sangster Area- 22 hectares	Restored 22 hectares with various fast growing tree species such as Batai (<i>P. falcata</i>). Maintenance of planted seedlings were completed and 1,500 seedlings were planted to replace dead seedlings. Done by the awarded contractor, M.B.A Enterprise. The Contract agreement will end in 2014.
2	250 hectares area – New Planting Area.	No planting activities was done by the contractor due to some technical and internal problems of the appointed contractor. Only Base camp and nursery was established in 2012.
B.4	Mt. Wullersdorf Forest Reserve	
1	Teck Seng Area - 30 hectares	Planting and maintenance was accomplished as targeted for year 2012. Batai and Ketapang seedlings were planted by EZ Enterprise. The contract agreement will end in 2015.
B.5	Madai Baturong VJR107F (Binuang) Forest Reserve	
1	Silviculture Treatment area - 150 hectares	Completed.
B.6	Kalumpang VJR107D (Sapang) Forest Reserve	
1	Silviculture Treatment area - 150 hectares	Completed.
C. Boundary Demarcation And Maintenance		
1	Madai Baturong VJR107F (Binuang) FR and Kalumpang VJR107E (Mt. Mangkok) FR	Survey work was postponed, waiting for State Government decision
2	Mt. Wullersdorf Forest Reserve	Maintenance of the Forest reserve boundary in areas encroached for illegal oil palm cultivation.
D. Expenditure		
1.	Under Vote D11 025: Ulu Kalumpang-Wullersdorf SFM Project). RMK9 – State Government Development Budget.	Budget approved for 2012 : RM2,570,000.00 Overall expenditure: RM2,536,937.37. Expenditure performance: 98.71%.