

マレーシア国
サバ州を拠点とする生物多様性・生態
系保全のための持続可能な開発プロジ
ェクト (流域管理経済手法調査)

調査報告書

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ABS	Access and Benefit Sharing
BBEC	Bornean Biodiversity and Ecosystems Conservation Programme
BBOP	Business and Biodiversity Offsets Programme (BBOP)
CBD	Convention on Biological Diversity
CCA	Community Conserved Area
CRBR	Crocker Range Biosphere Reserve
CRP	Crocker Range Park
CUZ	Community Use Zone
DID	Department of Irrigation and Drainage
DoA	Department of Agriculture
DOE	Department of Environment (Federal)
EE	Environmental Education
EPU	Economic Planning Unit
EPD	Environmental Protection Department
FiT	Feed-in-Tariff
FSC	Forest Steward Council
GEF	Global Environment Facility
HoB	Heart of Borneo
ICCA	Indigenous and Community Conserved Area
ITBC	Institute for Tropical Biology and Conservation, Universiti Malaysia Sabah
IUCN	International Union for Conservation of Nature
JICA	Japan International Cooperation Agency
JKKK	Village Security and Development Committee
KPLB	Ministry of Rural Development (Sabah)
LIGS	<i>Lembaga Industri Getah Sabah</i> /Sabah Rubber Industry Board
MSPO	Malaysian Palm Oil Council
MAB	Man and Biosphere Programme, UNESCO
MPOA	Malaysia Palm Oil Association
MOSTI	Ministry of Science, Technology and Innovation, Malaysia
NGO	Non Governmental Organisation
NRO	Natural Resources Office

PES	Payment for Ecosystem Services
RSPO	Roundtable on Sustainable Palm Oil
REDD+	Reducing Emissions from Deforestation and Forest Degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries
SDBEC	Sustainable Development on Biodiversity and Ecosystems Conservation in Sabah
SDC	Sabah Develop Corridor Blueprint
SEDA	Sustainable Energy Development Authority of Malaysia
SEDIA	Sabah Economic Development and Investment Authority
SFD	Sabah Forestry Department
TEK	Traditional Ecological Knowledge
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UPM	Universiti Putera Malaysia

第1章 背景

1.1 調査の背景

マレーシア・サバ州は国有地 (State Land) の約 53%が保護区 (Protected Area) あるいは保全区 (Conservation Site) となっており、今後も面積拡大を目指す政策を打ち出すなど、生物多様性保全のための土地利用規制に積極的に取り組んでいる。しかしながら、これら保護区あるいは保全区は、域内の自然資源利用に一定の制限が課せられており、特に境界線近辺においては、地域住民と行政の間で土地・資源利用に係る軋轢が生じている地域もある。また、アブラヤシなどのプランテーション農業の拡大など域外の土地利用の変化は保護区域内の自然資源管理に重大な影響を及ぼしている。

このような状況の解決策の一つとして、サバ州では保護区・保全区周辺の多種多様な利害関係者の合意形成の試みや、人々の環境保全への意識を高める啓発活動の実施に積極的に取り組んできた。JICA は「ボルネオ生物多様性・生態系保全プログラムプロジェクト・フェーズ 2」(2007 年 10 月～2012 年 9 月)の実施を通じて、サバ州の西部に位置するクロッカー山脈地域において、保護区・保全区の指定と管理、および環境教育の実施支援を行ってきた。クロッカー山脈地域は、サバ州の重要な水源地となっており、2014 年 6 月には、同地域はクロッカー山脈生物圏保護区 (Crocker Range Biosphere Reserve/CRBR) としてユネスコ MAB (Man and the Biosphere Program) に登録された。

サバ州政府は現在、CRBR の管理計画を策定中であるが、CRBR 内の核心地域 (クロッカー山脈公園と三つの保護林) 周辺においても、大規模なプランテーション農業が実施されている地域もあり、また核心地域周辺の緩衝地域や移行地域の自然資源管理と土地利用の適正化が重要な課題となっている。同地域の包括的な自然資源管理のためには、従来の土地利用規制手法と教育・啓発的手法に加え、市場メカニズムの活用や税・課徴金活用といった経済的な手法を導入し、これら複数の手法を包括的に実施することが効果的と考えられる。現在、サバ州には経済手法に関する政策はなく、UNDP/GEF の支援によって州レベルの生態系サービスへの支払いに関する政策の策定準備を進めている。

JICA は 2013 年 7 月から 2017 年 6 月までの 4 年間、「サバ州を拠点とする生物多様性・生態系保全のための持続可能な開発プロジェクト」を実施中であり、長期専門家 2 名 (チーフアドバイザー、業務調整員) を派遣している。本プロジェクトでは「サバ州の生物多様性戦略の実施を通じて持続可能な開発が推進される」ことをプロジェクト目標としており、成果 2「サバ州の経験が生物多様性保全と持続可能な開発のために国内的・国際的に共有される」の達成に向けた活動 (2-2) として「生物多様性のための持続的資金調達メカニズムの可能性に関する研究 (生態系サービスへの支払い (PES) や生物多様性を考慮した会計システム、持続可能な開発のためのインセンティブや税制の合理化、REDD+、企業の社会的責任 (CSR)、生物多様性センター基金の強化など) を実施する」こととしている。

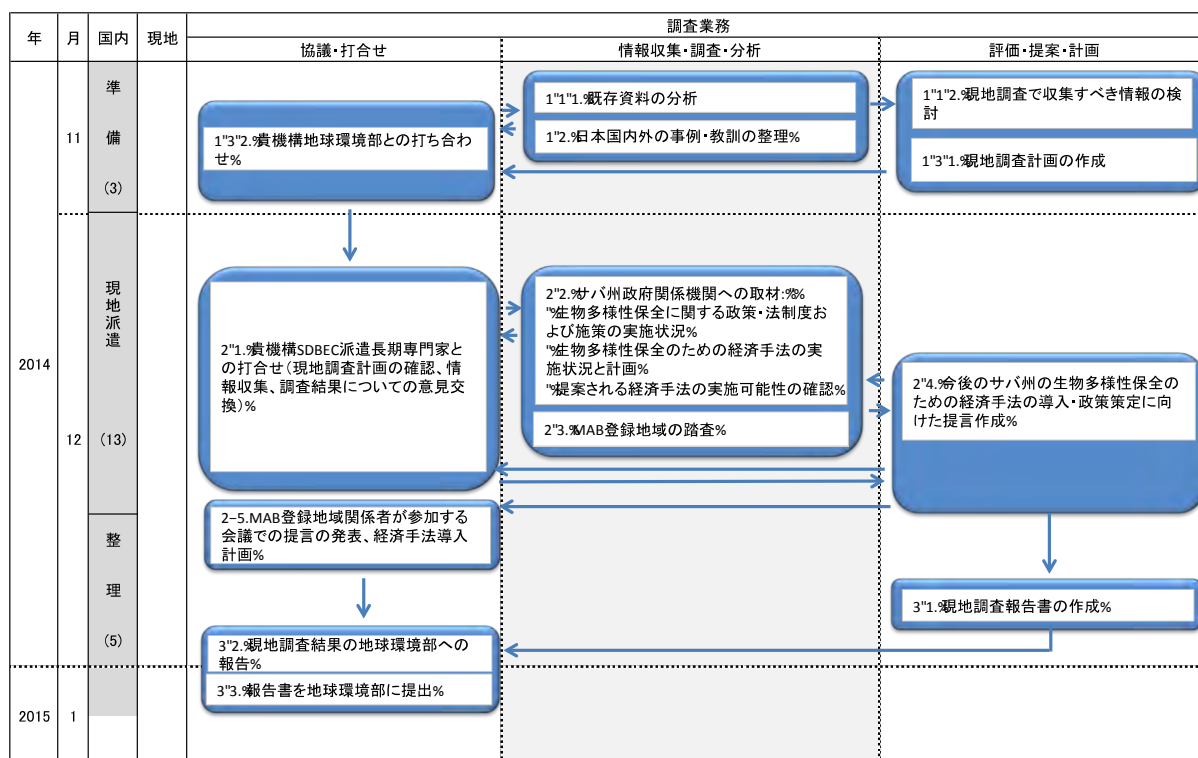
1.2 調査の目的

上記背景を受け、以下を目的として本調査業務は実施された。

- サバ州における生物多様性保全および流域管理のための PES およびその他の経済手法にかかる政策、戦略、計画および実施についての情報収集と分析
- CRBR における生物多様性保全および流域管理のための PES を含む経済手法導入の計画と実施可能性にかかる提案 (この提案は UNDP が GEF により支援する州レベルの PES 政策策定にも貢献しうるものとする。)

1.3 業務実施の具体的方法

本調査の作業工程を以下に示す。(注: 文中の 1-1, 1-2 等は公示内容に沿ったタスク番号)



タスク 1 準備期間(2014年11月下旬)

- 1-1 既存資料を把握し、現地調査で収集すべき情報を検討した。具体的には本件業務で必要となる情報を、①収集済データ(例:2011年までのBBEC関連報告書・資料)、②追加・更新が必要なデータ(例:MAB登録申請書、MAB登録地域管理計画案)、③未収集データ(例:サバ州でのPES等経済手法関連資料)に整理し、②・③に該当する情報について、可能な場合はウェブ等で収集を開始し、現地での情報収集に備えた。
- 1-2 貴機構作成の「執務参考資料:生態系サービスに係る事業分析及び協力の方向性の検討 報告書」を理解した上で、日本国内外の先進的とされる事例を確認し、本件対象 MAB 登録地域の自然条件・社会経済条件に照らして参照・適用の可能性のある事例・教訓を整理した。
- 1-3 上記に基づき現地調査計画を作成し、地球環境部に説明した。

タスク 2 現地派遣期間(2014年12月上旬~12月中旬)

- 2-1 現地派遣中、必要に応じて「サバ州を拠点とする生物多様性・生態系保全のための持続可能な開発プロジェクト」(SDBEC)派遣長期専門家と逐次打合せを持ち、現地調査計画の確認、情報収集、調査結果についての意見交換を行った。
- 2-2 サバ州政府関係機関に対し取材を行った。2011年までのサバ州の生物多様性保全に関する一般的な政策・法制度および施策の実施状況については既に十分な分析を行っていたので、取材ではそれ以降の同州の生物多様性保全の進捗、および生物多様性保全のための経済手法の実施状況と計画に焦点を当て効率的な取材を行った。森林局は、UNDP/GEFによる支援を受けたプロジェクト「マレーシア・サバ州の森林の多様な利用における生物多様性保全」をはじめ、マルア・バイオバンク事業、REDD+、PESの検討などの経済手法を積極的に導入・検討していることから、取材を実施した。また MAB 登録地域管理計画案にある管理体制から、公園局をはじめ同地域管理で想定される実施機関とその役割について確認し、これらの機関にも取材した。
- 2-3 上記と平行して SDBEC のパイロット事業として伝統的傾斜地農法、無農薬野菜栽培、養蜂、堆肥づくりが実施されている Tudan 村の活動の現場を視察し、PES 等経済手法適用の可能性を検討した。また、クロッカー公園内の管理事務所、郡庁はじめ関係政府機関の地域支

所も必要に応じて取材した。

- 2-4 収集した情報を整理・分析し、経済手法導入に向けた提案をまとめた。まず集水域の自然林保護や里山的土地利用による水供給・土壌浸食抑制サービス、希少動植物を含む生態系の観光サービスなど、経済手法の対象となり得る生態系・生態系サービスを確認した。また、生態系サービス提供者に対する PES を通じた支払いの方法、パーム油産業・観光業・発電業など企業との連携、森林・生物多様性保全のための基金の支援・新設に加え、税、補助金、オフセットを含む開発権取引、認証制度等その他の経済手法を分析し、実施可能性の高い提案をまとめた。
- 2-5 MAB 登録地域管理に関係する全政府機関および上記提案に関係の深い諸組織に対する報告会にて、上記調査結果・提案を発表し、意見交換の上で経済手法導入の計画概要について合意を得た。本作業は、SDBEC が現在支援中の参加型計画による MAB 登録地域管理計画づくりの枠組みにおいて実施し、経済手法導入の計画案を同管理計画の一部とすることも提案した。添付資料 2 に同報告会の議事録を示す。

タスク 3 整理期間(2014 年 12 月下旬～2015 年 1 月上旬)

- 3-1 現地調査結果を報告書(英文及び和文)にまとめた。
- 3-2 現地調査結果を JICA 地球環境部に報告した。
- 3-3 上記報告書を JICA 地球環境部に提出した。

1.4 調査期間、取材先

本調査に配置されたコンサルタントがコタキナバル在住であることから、本調査の準備、現地派遣、整理をすべて国内作業として 2014 年 11 月 26 日から 2015 年 1 月 13 日の期間中に実施した。調査中に実施した 25 の関係政府機関・組織の面談取材記録、及び SDBEC パイロット事業対象地である Tudan 村の現地調査記録を添付資料 1 に示す。

第2章 サバ州における地域開発と貧困

2.1 マレーシア及びサバ州の貧困の推移と現状

CRBR をはじめサバ州において、実施可能性の高い PES および流域管理経済手法の導入を検討・提案するためには、同地域の社会経済状況を理解することが重要である。特に、CRBR を含むサバ州の農村地域において、政府は過去 40 年間にわたり貧困撲滅を優先課題として地域開発を進めてきたが、未だ貧困が解消されていないことは重要である。政府によるサバ州の農村開発はこれまで常に貧困撲滅を最重要課題として計画・実施されてきた。生態系サービスの提供者および利用者である農村地域住民と彼らによる土地利用を理解するためには、背景としてサバ州農村地域の現状と、政府による貧困撲滅に係る政策とその実施についての理解が肝要である。

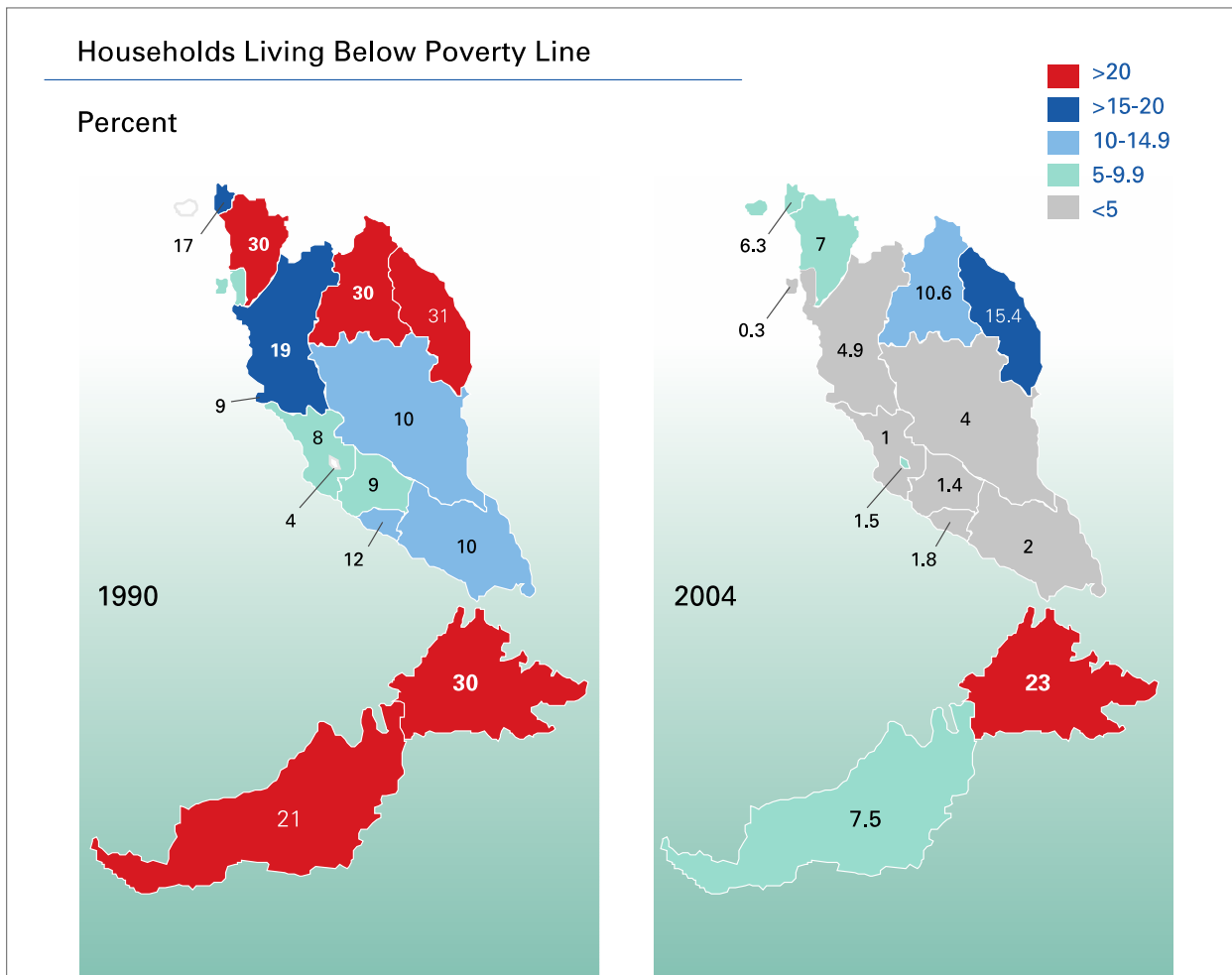
マレーシア政府は 1970 年代から長期の政策目標を定めて貧困撲滅にとりくんでおり、国レベルで見るとそれはめざましい成果を上げた。1970 年に 52.4% であった全国の貧困率は、1997 年には 6.1% に減少し、2012 年には 1.7% とごくわずかとなっている。しかし、マレーシア全国で貧困率が 1/5 に急減した 1980 年代から 1990 年代に、サバ州での貧困率は顕著な減少を見せなかった。1990 年代半ばから約 15 年間、サバ州の貧困率は 20% を境に上下していた (表 1、図 1)¹。その後、2009 年から 2012 年の 4 年間で、サバ州貧困率は半分以下に急減したが、直近の 2012 年の貧困率 (8.1%) はマレーシアの他州と比較すると極めて高い (図 2)。

表 1 サバ州及びマレーシアの貧困率 (1976 年～2012 年)

Year	1976	1979	1982	1987	1995	1997	1999	2002	2004	2009	2012
Total in Sabah	58.3%	41.1%	29.2%	n.a.	28.71%	21.37%	24.31%	16.00%	24.22%	19.7%	8.1%
Urban	25.9%	21.3%	15.9%	n.a.	15.36%	10.24%	14.25%	9.25%	13.97%	9.8%	5.3%
Rural	65.7%	50.1%	36.1%	n.a.	35.75%	27.72%	30.22%	23.64%	35.79%	32.8%	12.9%
Total in Malaysia	37.7%	37.4%	n.a.	19.4%	8.7%	6.1%	8.5%	6.0%	5.7%	3.8%	1.7%

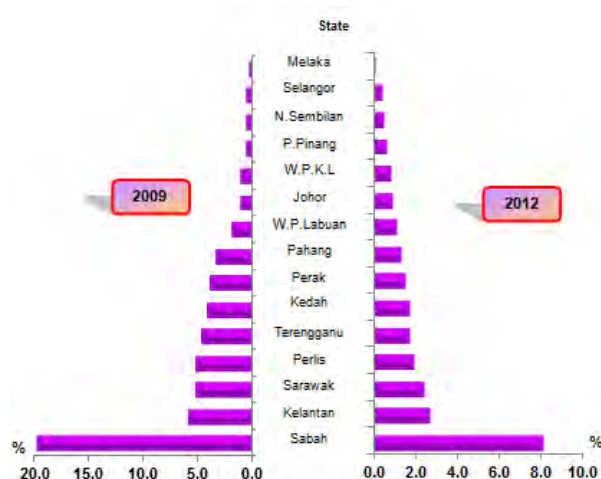
出典: Government of Malaysia, 1984. UKM, 2006. Department of Statistics Malaysia, 2014. Ministry of Tourism, Culture and Environment Sabah, 2014. Economic Planning Unit, 2014.

¹ 1999 年に貧困度はわずかに上昇し (24.31%) その後 2002 年には 16.00% まで減少したが、2004 年には再度上昇し 24.22% となっている。1999 年の貧困度の上昇は、1997 年の金融危機の影響が数年遅れで表れたものと説明しうる。2002 年の貧困度の減少は、2001 年後半から 2002 年に実施された外国人労働者の取り締まり強化により低所得労働者へのマレーシア人雇用が増大したという可能性、また都市周辺の違法居住地域の撤去により貧困層人口が実際よりも少なく見積もられたという可能性に関連があると思われる。その後、2004 年の貧困度の上昇は、取り締まりが緩和されて外国人労働者が再び増加しマレーシア人の雇用機会が減少したと思われること、違法居住地域の撤去が減りマレーシア人の貧困層の政府への登録が増えたこと、貧困層を確認・登録する政府の能力が向上したことから説明しうる (PADECO et al. 2007)。



出典: IDS, 2008

図 1 州ごとの貧困率 (1990 年、2004 年)



出典: Department of Statistics Malaysia, 2014

図 2 州ごとの貧困率 (2009 年、2012 年)

サバ州の経済は第一次産業と限られた品目（石油・ガス）輸出に大きく依存している。2012年の州内の総生産においては、サービス部門がその 50.4%を占めるが、第一次産業の割合は 22.9%であり、他方製造業は 7.9%にすぎない。就労者数においても 2003 年時点で農業、狩猟、漁業、林業、漁業の従事者が 31.3%を占める（全国平均は 13.8%）。サバ州における製造業の発展の障害として、マレーシア半島部の経済センターから遠く離れているという地理的条件、不十分な基礎インフラ、人的資源の不足、同州の特別な状況に配慮した制度的・政策的施策の欠如がある。

2.2 農村開発・貧困撲滅に係る政策

2.2.1 第 10 次マレーシア計画 (2011 年-2015 年)

第 10 次マレーシア計画は、現在施行中の 5 カ年（2011 年～2015 年）にわたる国家開発計画である(EPU, 2010)。同計画には、1970 年に 49.3%であった貧困率が 2009 年に 3.8%に減少し、極貧層もほぼいなくなったことから、「マレーシアは貧困に対する戦いへの勝利を宣言することができる。」と記されている。これを受けて同計画では、政府の力点を低所得セグメント、特に 240 万世帯からなる底辺の 40% (the bottom 40%) に移行するとしている。底辺の 40% に対する戦略は、これまでの貧困課題と異なり、支援の分配ではなく、低所得世帯により良い生活水準を享受する機会を保証することとなる。

他方、計画では、特定の地域やコミュニティーに「貧困のポケット」が依然として残っていることも認めており、これら貧困層・脆弱層に対しては政府が支援・福祉を提供しつづけることを約束している。持続可能な形で貧困に対処するための特別なプログラム、特にアグロポリタン事業といった所得創出の機会が提供される。

2.2.2 サバ開発回廊 (SDC) ブループリント(2008 年-2025 年)

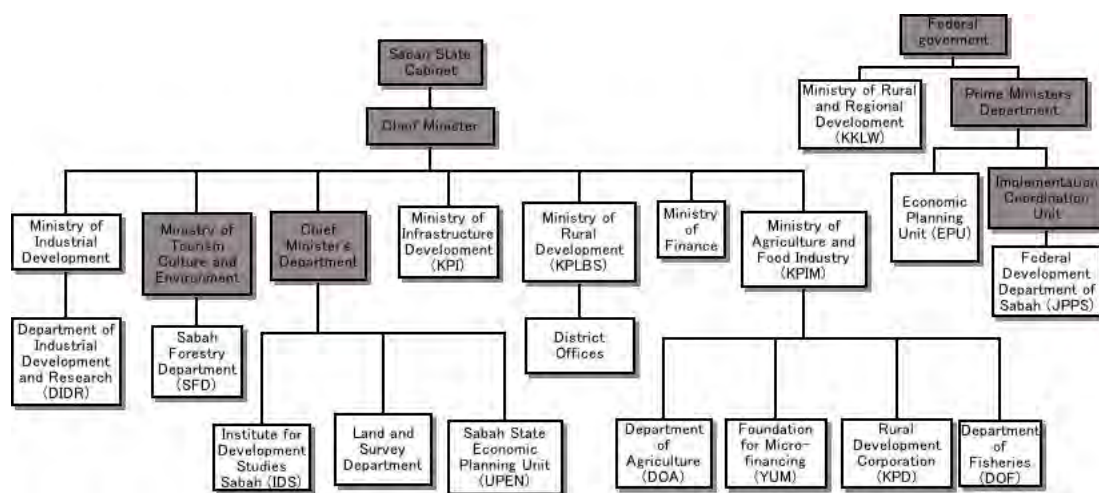
「サバ開発回廊 (Sabah Development Corridor/SDC)」は、2008 から 2025 年 18 年間を対象としたサバ州の開発のブループリントである。州の経済成長を加速させ、地域バランスを促進し、都市・農村間の格差を橋渡しすることによってサバの人々の生活の質を向上させると同時に、州の資源の持続可能な管理を確保するために開始された。

貧困撲滅の主要な課題は、貧困層が遠隔地にいること、農村地域のインフラ、貧困世帯をモニターするための正確なデータであることから、まず農村地域における基礎インフラ・公共設備の提供が必要である。貧困撲滅のためのその他の SDC での取り組みとして以下がある。

- 既存の貧困撲滅スキームの規模・範囲の拡大
- 特に農業を通じた農村地域での生産性の向上
- 小規模農村起業家精神の推進

2.2.3 貧困緩和・農村開発関係機関

サバ州の貧困緩和に重要な役割を果たしている政府諸機関、およびそれらの組織的關係を図 3 に示す。



出典: PADECO et al. 2007

図 3 サバ州における貧困緩和に係る政府諸機関

2.3 地域開発・貧困緩和の課題（持続的自然資源管理の視点から）

2006年から2007年に、(株)パデコ、東京農業大学、九州大学は国際協力銀行（JBIC）の委託を受けて、提案型調査「サバ州持続的資源利用による貧困地域所得向上事業」を実施した。調査の目的は以下の通りである。

「1件ないし2件のパイロット事業を実施することにより、地域コミュニティによる自然資源の持続的利用によりサバ州における経済格差の是正に貢献すると認められる新規円借款事業の素案を提出する。本調査はサバ州内の極貧層を主たる対象とし、その対象地域は諸関係政府機関が決定する。」

同調査の報告書(PADECO et al. 2007)には、サバ州における貧困と貧困撲滅プログラムにかかる課題が、持続可能な農村開発と生物多様性保全の観点からも分析されている。文献レビューおよび10件の貧困緩和事業の事例研究結果に基づく、サバ州における貧困の主要な原因を以下に、また貧困に関わる諸問題とそれらの間の因果関係を示す問題系図を図4に示す。

(1) 遠隔地での居住および低い教育レベル

貧困層の居住地が遠隔地であることは、教育機関や市場へのアクセスの困難さなどの共通の要因となっている。また、教育レベルの低さも、貧困層が利用可能な情報の乏しさや諸政府機関による支援の難しさの共通の要因となっている。

(2) 貧困層の経済活動の特徴

貧困層の大半は農業、漁業、狩猟採集に頼った生活をしている。貧困層は、遠隔地に居住し教育レベルが低いことから、市場へのアクセスが困難で、市場での販売技能も乏しい。生産物のほとんどは所得向上につながる販売ではなく、自家消費に充てられる。

(3) 持続可能な資源利用のための知識の欠如

生産規模の小ささにより、貧困な農民や漁民の生産性は比較的に低い。生産性を高めるために、農漁民は収奪的な自然資源利用をしがちであり、これが自然資源の劣化ひいては長期的な生産性の低下をひきおこすことがある。

(4) 効果的でない貧困撲滅事業

政府が実施してきた貧困撲滅事業の目標達成度の低さも、貧困の諸原因のひとつと考えられる。JBIC 提案型調査では、多くの政府支援による貧困撲滅事業が、支援の継続中は所得向上を達成しながら、支援の終了後は放棄されたという例が多く観察された。1997 年からサバ州森林局がコタマルドゥ郡で実施したガナ移住統合的開発事業 (GRID) では、森林保護区の資源保全のために林内の地域住民を保護区外の新しい入植地に移住させるという当初目的は、10 年を経て達成されていなかった。また、移転住民らは公共設備の欠如や市場へのアクセスの難しさから、依然として貧困から抜け出せていない。環境保全の視点からも貧困緩和の視点からも目標が達成されていたとは言いがたい。

(5) 政府職員・機関の能力不足

いくつかの貧困撲滅事業がその目標を達成しない原因の一つは、人的資源の欠如 (人数および各人の能力の両者を含む) により、事業のモニタリング・評価が十分になされないことにある。

(6) 単一作物プランテーション以外の代替案の少なさ

政府ないし公社が単一作物プランテーションを開設しそこに貧困層を居住・労働させるという事業は、これまでのマレーシアにおける貧困削減の手段として一般的であった。かつてはアブラヤシがプランテーションの作物として一般的であったが、2000 年代以降は国際市場でのゴム価格の上昇を反映してゴム栽培支援も盛んである。

サバ州における過去の単一作物プランテーションの中には、産業として利益を上げることに成功しているものの、半島部で成功しているほどには貧困層には裨益していないものが見受けられる。その理由の一つは、政府がプランテーションの土地所有権を貧困層に移転すると、多くの貧困層が土地を転売してしまうことがある。

(7) 森林保全と貧困対策の対立

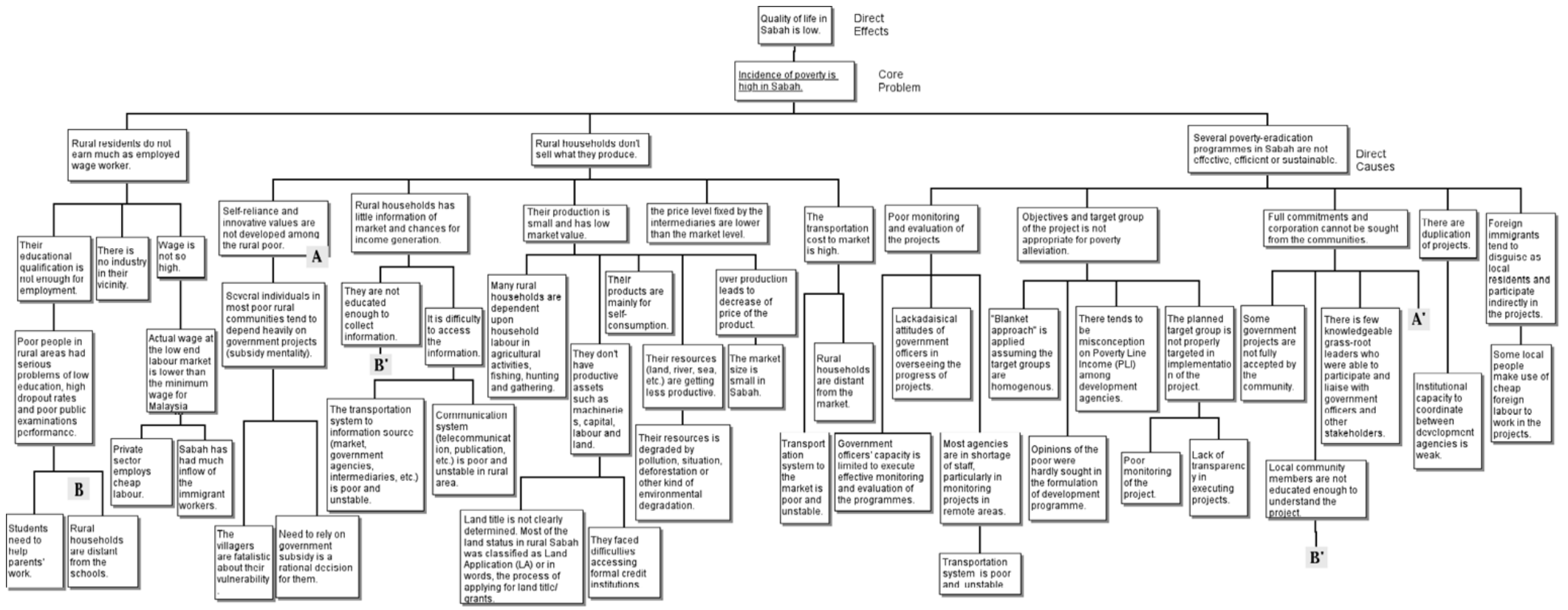
農村地域の経済発展と自然保護区管理の利害は時に対立し、それはサバ州での保護区管理において最も解決が困難な問題の一つと考えられてきた。この課題に対し、サバ州政府は対策を講じてきたが、その戦略は地域的条件や各機関の方針に依存して事業毎に多様である。それらのうちいくつかはある程度の成功を収めている。他方、保護区内の「違法」居住者について、地域コミュニティとの共同管理の道を探るとりくみもある一方、厳格な法適用の例もあり、一貫した政策があるようには思われない。

(8) 社会要因への配慮の欠如

貧困緩和事業を担当する政府職員の多くは、貧困対策事業の対象の対象者自身に「態度の問題」があり、それが事業の目標達成度や持続性が低いことの原因であるとみなすことがある。しかし、注意深く観察すると、対象者が事業を受け入れなかったり継続しない事例では、なんらかの社会経済的要因が働いていることが多い。たとえば、バンギ島のいくつかの村で実施された海藻養殖事業で、事業の成否を分けた要因は、海藻養殖事業が村落社会において持つ宗教的・社会的位置づけの違いであった。貧困緩和事業の計画においては、技術的要因にのみ注意が払われ、そのような社会要因には十分な注意が払われないことがあり、そのために事業が目標を達成できないこともある。

(9) その他の要因

サバ州における市場規模の小ささは貧困につながる要因の一つである。市場規模が小さく、人口密度も低いサバにおいて、過剰生産は商品の価格低下をおこしやすい。外国人労働者による実質最低賃金への影響も無視できない。サバ州には州人口の 24.9% (2000 年) を占める多くの外国人が居住しており、外国人労働者が、州内の労働市場において職を得ることは、実質賃金を低下させると考えられる。



出典: PADECO et al. 2007

図 4 サバ州の貧困に係る問題系図

第3章 サバ州における自然環境保全のための経済インセンティブ導入の事例・計画

3.1 マレーシア国レベルでの自然環境保全における PES、経済インセンティブの導入

3.1.1 PES にかかる国家政策策定

マレーシアの経済計画局（EPU）は、近年いくつかのセミナー・会議において、PES について言及しており、現在の規制が生態系サービスを保護するためには不十分であることから、生態系サービスの利用法を改善する体系的な市場メカニズムを作ること提案してきた(EPU 2012a, EPU 2012b)。

2012 年、これらのメカニズムを探求するための初期段階として、EPU とマレーシアプトラ大学（UPM）は、UNDP の支援を受けて、潜在的な生態系サービスとそのユーザー（主要セクター）に関する PES のスコーピング調査を実施した。同調査からは、マレーシアにおいて PES の理解が不十分であること、PES にかかる能力強化の必要が示された。また、PES はマレーシアの法律に明示的には組み込まれていないものの、PES の特定の要素は国内の多くの法律の中に認められることも明らかになった。加えて、これまでさまざまな生態系サービスの経済評価が行われてきたにも関わらず、PES メカニズムの開発にはそれらが活用されず、経済評価の結果と教訓も集約的なデータベースにまとめられていないことも明らかとなった。また、海洋生態系の経済評価は、陸域生態系のそれよりも少ない。

UNDP が Global Environment Facility (GEF)により支援する国レベルのプロジェクト「生物多様性 2010 年～2020 年戦略計画実施支援のための国家生物多様性計画」は、マレーシアにおける国家優先事項および愛知ターゲットに適合させて、2015 年までに国家生物多様性戦略・行動計画（NBSAP）を改訂することを目的としている。この改訂においては、PES や他の経済インセンティブに係る政策といった、生態系サービスを捉えるための潜在的な手段を確認することが計画されている。

第 11 次マレーシア計画（2016 年～2020 年）策定に向けて、EPU は生物多様性保全について主要な諸提案を準備している。4 番目の提案として「自然資源管理・保全における財政メカニズムを強化する」ことが検討されている。この提案の目標の一つは「水利用、生物多様性保全、エコツーリズムのためのリクリエーション地域のための PES の実施」とされている(EPU, 2014a)。

3.1.2 国レベルでの REDD+への取り組み

「森林減少・劣化からの温室効果ガス排出削減」（REDD+）とは、気候変動枠組み条約（UNFCCC）で定められた仕組みで、途上国での森林減少・劣化の抑制や森林保全による温室効果ガス排出量の減少に、資金などの経済的なインセンティブを付与することにより、排出削減を行おうとするものである。国際レベルにおける PES の一例と捉えられる。

UNDP は国レベルのプロジェクトである「マレーシアでの REDD+レディネス」（2011 年～2013 年）を通じて、同国を支援してきた。同プロジェクトは、REDD+のための持続的な財政メカニズムづくりと能力強化を支援し、組織制度と法的枠組みづくりに向けた政策提案と支援を提供することを目的とし、半島部マレーシア、サバ州、サラワク州それぞれの森林局とともに、結束した REDD+国家プロセスの形成に努めた。その成果として、REDD+国家戦略の策定作業が開始された。戦略に示された REDD+実施のためのロードマップには、マレーシアで検討しうる REDD+活動の概要、参照排

出レベルの提案、REDD+のための財政機構・利益配分メカニズムの提案、セーフガード確保の方法、そしてマレーシアにおける REDD+実施管理機構が含まれている。

3.2 サバ州における生物多様性保全のための PES 等の経済手法の導入

3.2.1 「マレーシア・サバ州の森林の多様な利用における生物多様性保全」(UNDP-GEF 事業)での PES 政策策定

「マレーシア・サバ州の森林の多様な利用における生物多様性保全」は UNDP が GEF により支援する事業で、2012 年 1 月より 2018 年 12 月までの予定で実施されている。同事業の目的は、生物多様性、生態系の諸機能・復元力を主流化するために、共通かつ統合的な管理アンブレラ戦略のもと、既存の持続的利用を維持しつつ、景観と保護区を連結した土地利用をもたらすことにある。この目標を、同事業は三つの互いに関係するアウトカムにより達成する。すなわち、(1)最適化された多様な利用の計画、資金調達、森林計画の管理保護を可能にする環境整備、(2)多様な利用のための森林景観計画と管理システムのデモンストレーション、(3)多様な利用のための森林景観管理への革新的な資金調達手法のデモンストレーション、である。

同事業のプロジェクトドキュメント(UNDP 2012b)によれば、サバ州は PES メカニズムを通じて提供される様々な商品・サービスを未だ活用していない。2011 年には WWF が PES の適用が可能な集水域サービスを確認する調査を行い、サバ州のキナバタンガン川とラブック川を含む 7 つの河川流域をパイロット地域として、集水域サービスへの支払いのビジネスモデルを検討したという例もある(次節参照)。同プロジェクトドキュメントではそれに触れた上で、前節で述べた国レベルの UNDP-GEF 事業で実施されたような PES のスコーピング調査をサバで実施する事を提案している。

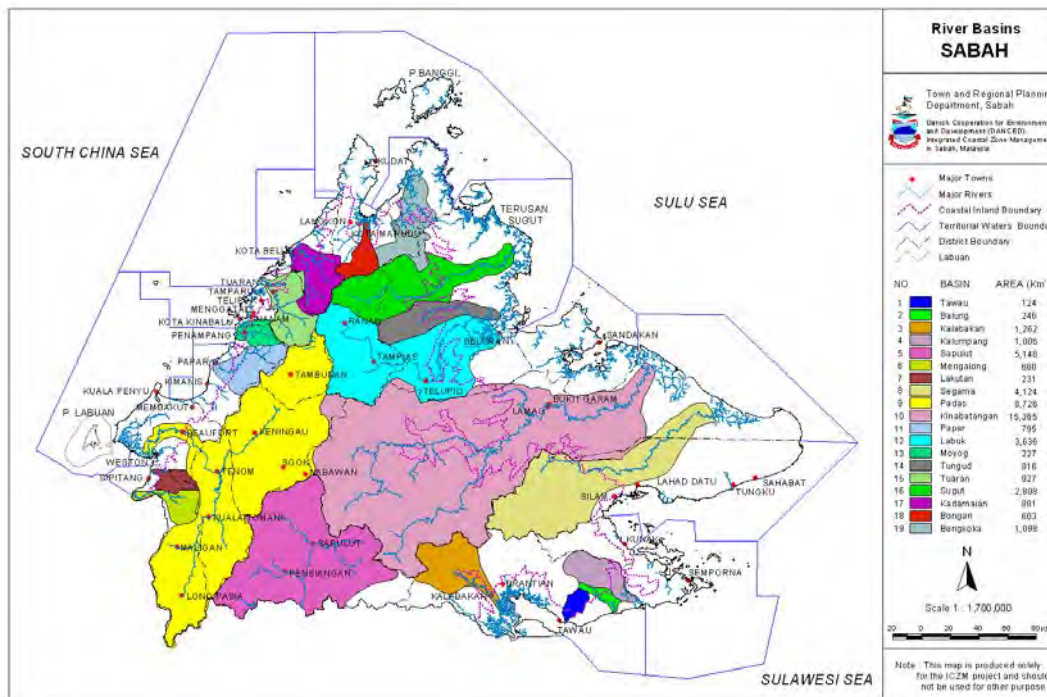
同事業は、そのアウトカム(1)(最適化された多様な計画、資金調達、森林計画の管理保護を可能にする環境整備)に向けて、REDD+、バイオバンキング、そして PES といった革新的かつ持続的な資金調達の導入・実施を許すような環境の整備も支援している。また、アウトカム(3)(多様な利用のための森林景観管理への革新的な資金調達手法のデモンストレーション)には、REDD+、生物多様性オフセット、PES の三つを代替的な歳入創出のためのスキームとみなし、それらの計画立案とパイロット事業の実施が計画されている。

2014 年 9 月時点の同事業のインセプションレポート草稿によれば、同事業では 9 つのサブコントラクトが計画されており、そのうちの 4 番目は、州レベルの PES の政策・規則の新規策定と PES のパイロット事業の実施である(2015 年から 4 年間の予定)。森林局の副局長に取材したところ、このサブコントラクト計画については最近変更を加えたとのことであった。当初はバイオバンク、REDD+、そして上記 PES 政策策定の三つのサブコントラクトが計画されていたが、これらを再編成して、1)州レベルの政策にかかるサブコントラクト、2)投資についてのサブコントラクトに分けることとなった。

3.2.2 集水域サービスの評価とハート・オブ・ボルネオの「流域サービスクイックスキャン」

サバ州の森林は、水の供給、洪水制御、炭素隔離と気候調節などの重要な生態系サービスを提供している。サバ州には 19 の主要な河川流域があり(図 5)、そのほとんどはサバ内陸の高地に位置する。これらの流域は、水循環の調節において重要である原生林が含まれている。州最大の流域は東海岸のキナバタンガン川流域であり、その面積は 15,385 km²で、これに西海岸の 8,726 km²の面積を示すパダス川流域が続く。これ

らの19の河川流域には13の主要河川がある。延長560キロに及ぶキナバタンガン川は、その集水域がサバ州の東部地域の大部分を占め、サバ州で最長、マレーシアで二番目に長い川である(Town and Regional Planning Department, 1998)。

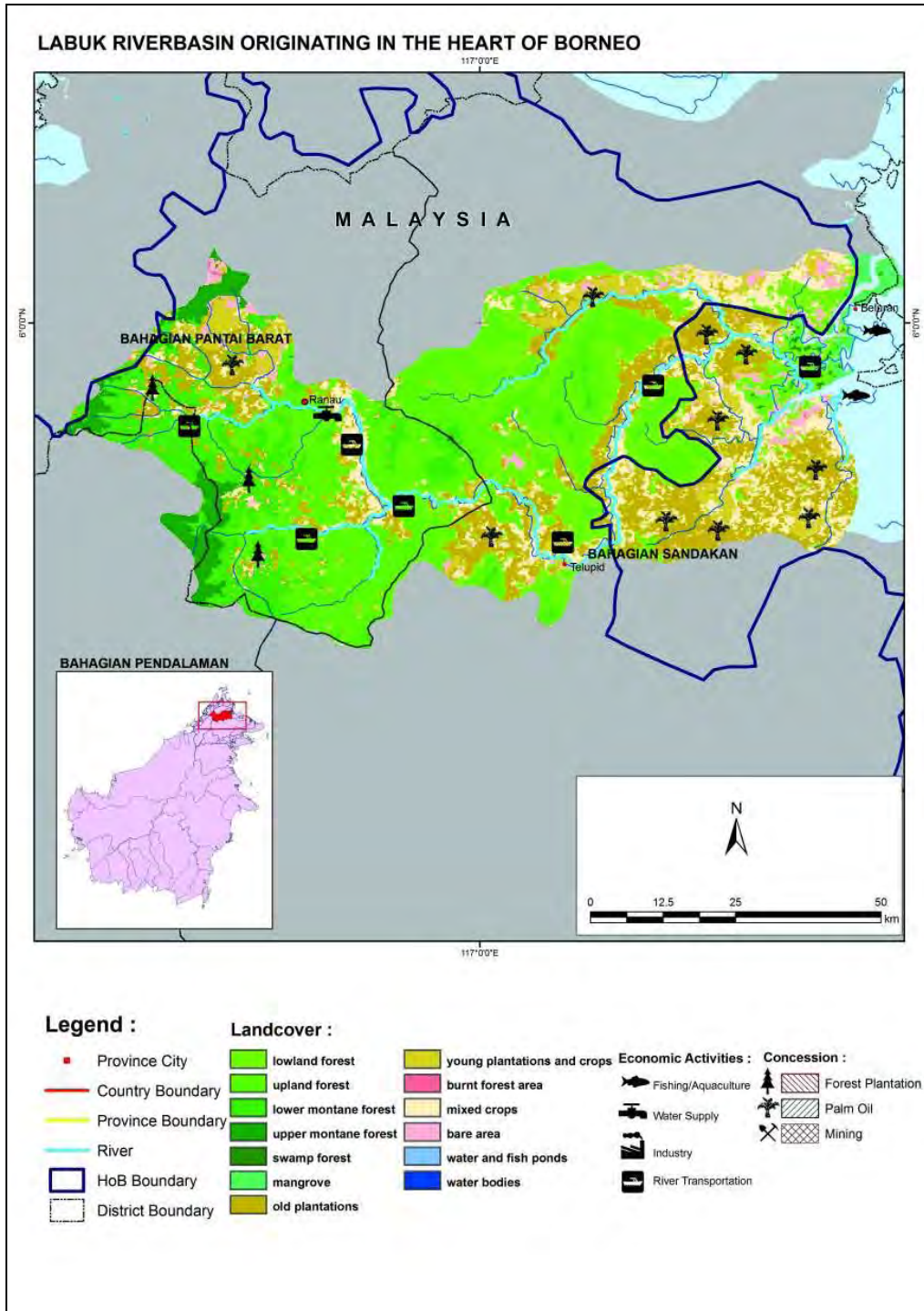


Source: Town and Regional Planning Department, 1998

図 5 サバ州の主要な流域

Witteveen Bos Indonesia (2011) は、ハート・オブ・ボルネオのもとWWFの委託を受けて、「流域サービスクイックスキャン」という調査を実施した。同調査では、「誰が森林保全のために金を払うことができ、誰がこれを実施する必要があるか？」という疑問に答えるための鍵としてPESを捉え、ハート・オブ・ボルネオ地域からの様々な流域サービスの迅速な評価を実施し、これらの流域サービスのユーザーと受益者を特定することを目指していた。同調査は、森林を経済的に評価する事例をつくり、森林保全と管理への資金調達への支援システムをより実用的に実施する第一歩であった。同研究では、3カ国の7河川流域が、流域サービスへの支払いの実施のためのビジネスケースをテストするための潜在的なパイロット地域として選択された。サバ州で選ばれたのは、ラブック川流域とキナバタンガン川流域であった。

ラブック川流域の調査結果によれば、上流域での森林伐採と大規模アブラヤシ農園が、ラブック湾での土砂堆積と栄養分の流出と関連を示すことから、同流域はパイロットサイトとして特に興味深い。ラブック湾の養殖やタートルアイランド海洋公園での観光業への影響は、流域サービスに対するPESの基盤となりうる。加えて、比較的大きな人口、水力発電計画、水の不足も、ラブック川の流域サービスへの支払いが経済的に魅力的となるかもしれない根拠となる。

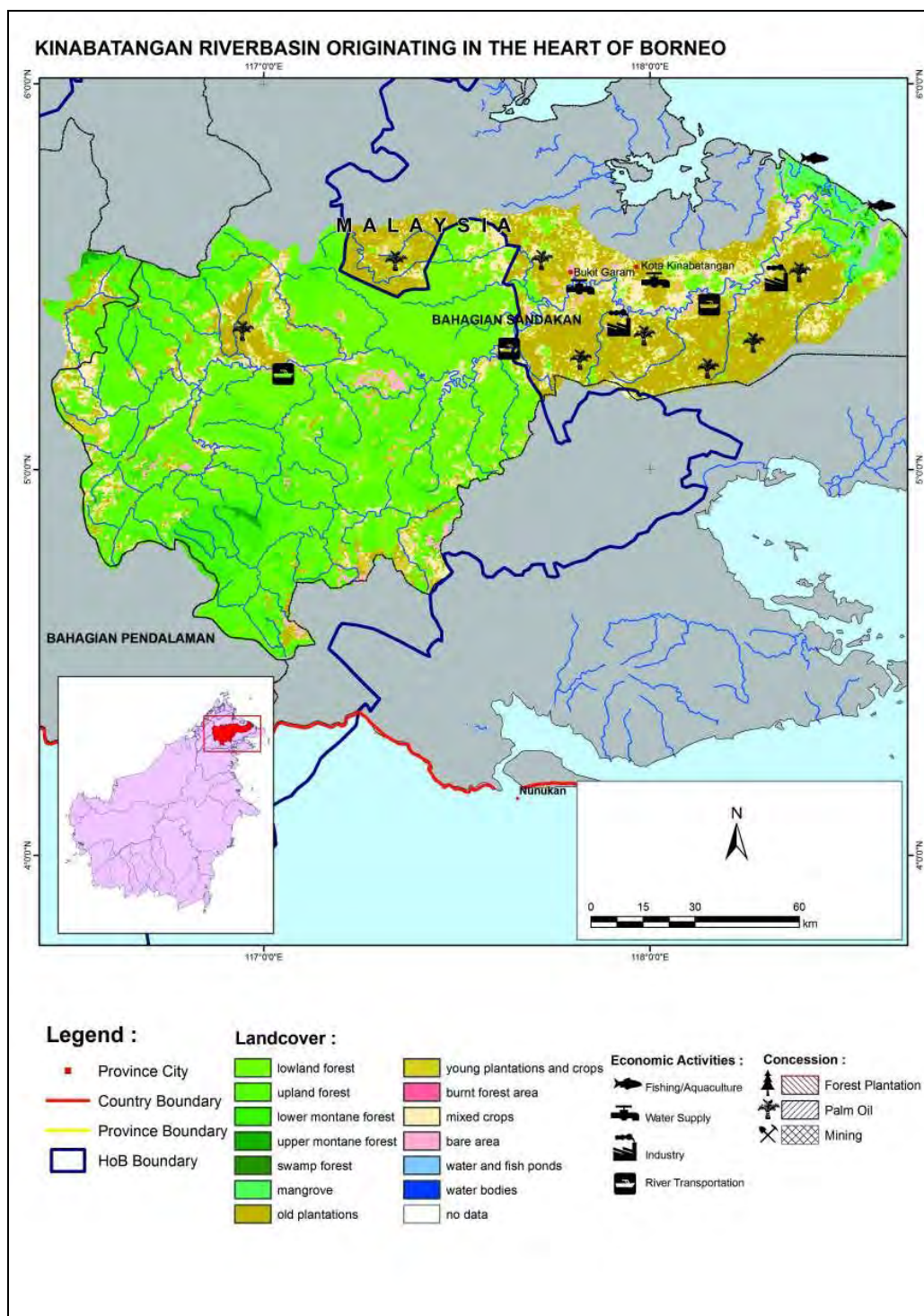


Source: Witteveen Bos Indonesia, 2011

図 6 上流域にハート・オブ・ボルネオを有するラブック川流域とその土地利用

サバ州における同調査のもう一つのパイロットサイトであるキナバタンガン川流域については、大規模なアブラヤシ農園開発が行われていることから経済的に興味深い事例である。アブラヤシ農園開発は、森林への直接の脅威であると同時に、森林伐採による洪水という影響も生じる。同流域保全の受益者としては、洪水制御、河川によ

る交通手段の確保、生計向上を通じ、観光業、養殖業、キナバタンガン流域住民がこれにあたる。



出典: Witteveen Bos Indonesia, 2011

図 7 上流域にハート・オブ・ボルネオを有するキナバタンガン川流域とその土地利用

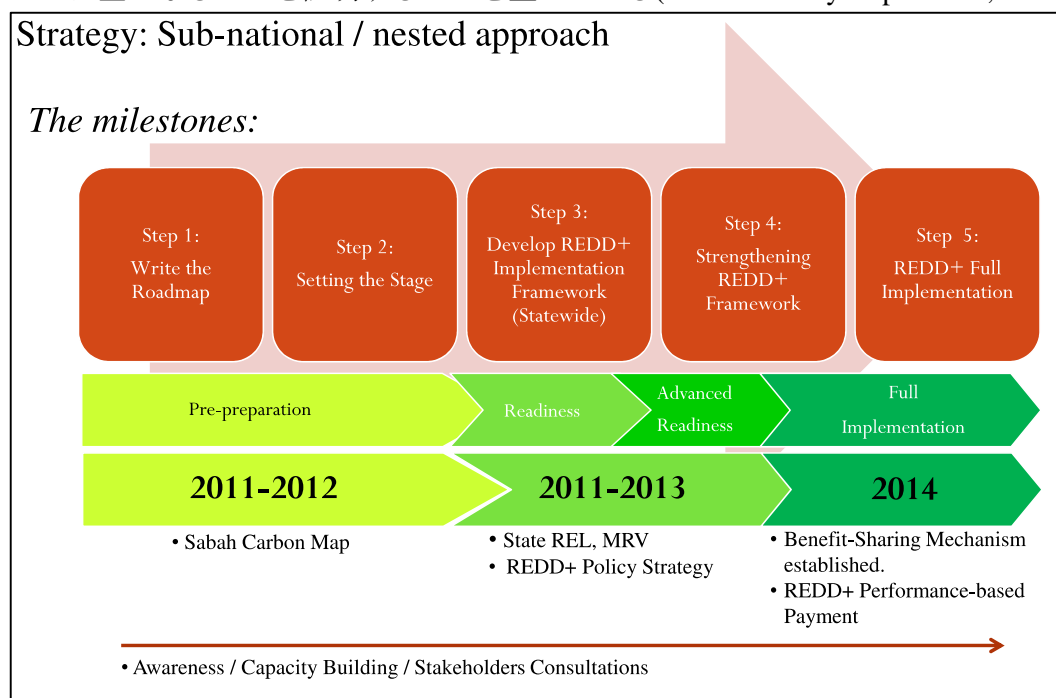
その他の重要な流域として、サバ州西海岸には、上流域にCRBRを含むパダス川流域がある。同流域には66MWの発電量を有するサバ州最大の水力発電所（テノムパンギ）がある。パダス川やキウル川でのボートでの急流下りをはじめ、サバ州の河川はリクリエーションとしての価値も高い。

3.2.3 バイオカーボンによる資金調達（REDD+）

サバ州森林局は 1990 年代にすでに炭素隔離にかかる先駆的な事業をいくつか実施していた。2000 年代に入ると、同局は炭素ストックの見積もりと排出のリスクのある炭素量の見積もりを行った。2009 年には、サバ州の 360 万ヘクタールの森林が有する炭素ポテンシャルが 5 億 6600 万トンで、28 億ドルの価値があるとの見積もりを得た。また、森林局は連邦政府及びWWFマレーシアと協働して、サバ州 REDD+ロードマップを策定した（図 8）。

2012 年 2 月に開催された REDD+の開始についての国レベルワークショップにおいて、サバ州森林局は発表を行い、サバ州の REDD+の現状を以下のようにまとめている。

- サバ州は、最大 50 万の自主排出権クレジット VCU (verified carbon unit) の販売により、潜在的な REDD+資金を利用するための正しい軌道に乗っている。
- 炭素による実際の金の取引は未だ実施されていない。
- サバ州 REDD+ロードマップは、国家開発に沿ったもので、州の REDD+の実施を推し進めるためのガイダンスである。
- より多くのパイロット事業が実施される。
- 成否は、全ての前提条件を満たすための手段に大きく依存している。
- 準国家（州レベル）のアプローチは、前進するための最も実用的な方法であり、全ての関係者の支持が求められる。
- 重要な点として、州政府は、森林を維持することで、懐疑的な人々に対し木々に金になることを証明することを望んでいる(Sabah Forestry Department, 2012)。



出典: Sabah Forestry Department, 2012

図 8 サバ州 REDD+ロードマップ

現在、欧州連合（EU）は、サバ州で「持続可能な森林管理とコミュニティ開発を通じた気候変動への取り組み」（EU-REDD プロジェクト）を実施している。同プロジェクトにおいて、森林局は州レベルの REDD+戦略を計画・実施するために必要なツールを開発するとともに、測定・報告・検証（MRV）、セーフガード、能力強化に焦点を当てている。EU-REDD プロジェクトでは、ガナハイランド事業、キナバル Eco-Linc 事業、キナバタンガン事業の三つのパイロット事業が実施されている。ガナハイランド事業が直接に森林局によって実施されている一方、キナバル Eco-Linc 事業とキナバタンガンはそれぞれサバ公園局とサバ州野生生物局によって実施されている。キナバル Eco-Linc 事業はキナバル公園とクロッカー山脈公園間の生態学的連結を目的としており、対象地域は CRBR と重なっている。

森林局はまた、WWF マレーシアと協力して、サバ州 REDD+ロードマップに計画された活動を実行している。特に炭素会計の方法論の開発、適切な法的・政策的枠組み、および REDD+の資金調達メカニズムの開発である。ハート・オブ・ボルネオ事業は、インドネシア、ブルネイ、マレーシア全体にまたがる越境保全プロジェクトであるが、同時に REDD+ロードマップに計画された活動を実施するプラットフォームとも考えられている。2011 年 8 月、ハート・オブ・ボルネオ地域内での REDD+の利害関係者の関与を促すために、コタキナバルで国際会議「森林と気候：ハート・オブ・ボルネオ（HoB）における REDD+の解説と理解」が開催された。

3.2.4 森林認証

森林認証は、生物多様性保全の経済手法の一つであるエコラベル制度の例とみなすことができる（OECD、2013）。サバ州政府はその政策として、2009 年からの 5 年間で（2014 年までに）、長期伐採ライセンスを与えたすべての森林保護区を国際的に認められた制度の下で認証することを目指していた（Sabah Forestry Department, 2003）。2013 年末の時点で、合計 863,762 ヘクタールの森林が何らかの国際的認証を受けている。これに対し、商業林（クラス II）の総面積は 2,177,732 ヘクタール、森林局の管理課にあるすべての森林のクラスの総面積は 3,614,730 ヘクタールである（Sabah Forestry Department, 2014）。

2013 年 5 月時点で、386,607 ヘクタールが森林管理協議会（FSC）の認証を受けている。それ以外の認証は、法遵守検証（VLC）による認証である。森林局副局長（森林セクター計画担当）によれば、最も重要なことは同州で産出する木材が全て合法であること、産地を明確にすることであり、そのために様々なレベルの認証スキームを適用して全ての森林を認証している。森林管理に係る認証の取得が困難な施業者に対しては、合法産地検証（VLO）が適用できる。VLO により産地を明確にできたならば、次の段階として VLC の適用を求める。

森林局はまた、クラス I、クラス VI 等の保護区（非生産林）の認証も計画している。これらの保護区では木材伐採は行われていないが、認証を受けることができる。

3.2.5 森林局が主導するその他の革新的資金調達メカニズム

サバ州森林局が実施するマルア・バイオバンク事業は、生物多様性の経済便益に注意を向けるための取り組みである「生物多様性の経済学」（TEEB）事業で刊行された報告書の一つでも、先進的事業として紹介されている（TEEB、2010）。マルアバイオバンクは非公開投資会社とサバ州森林局の共同事業で、彼らがバイオバンクに対し 50 年間森林を保全する権利を与える。その目的は、ダヌム・バレー保護区に隣接する過去に伐採された 34,000 ヘクタールの森林に復元のために、1000 万ドルを調達することである。マルアバイオバンクは、保護・復元された熱帯雨林の 100 平方メートルと等価

な生物多様性保全の証券を販売する。証券は1件当たり10ドル（1ヘクタール当たり千ドルに相当）で販売された。証券は、環境登録簿に登録されており、取引または回収することができる。証券の販売から発生した収益は、事業運営費に資金を供給するために使用され、50年間のライセンスの保管理のための信託基金に投資されている。これ以上の利益が生じた場合森林管理のライセンス保持者（サバ財団）とマルアバイオバンクの投資家の間で共有される。マルアバイオバンクからの証券の購入は、企業が他の場所での熱帯雨林への影響をオフセットするために使用することはできない。

SFDへの聞き取り調査によれば、マルアバイオバンクによって発行された生物多様性証券のこれまでの販売は少数にとどまっている。その理由の一つは、世界市場の景気後退である。また、バイオバンクの仕組みは、昔ながらの寄付や慈善活動と競合する。寄付を望む多くの人々がいる一方、バイオバンクはビジネスとしての形態である。森林局は、バイオバンク事業について結論づけるのは時期尚早と考え、2015年度にもマルアバイオバンク事業の予算を計上している。森林局は、炭素排出権取引でさえ市場はまだ懐疑的であり、生物多様性価値についてはなおさら取引のための準備ができていないと考えている。

その他の経済手法として、森林局はRSPOの枠組みの中でアブラヤシ農園のための生物多様性オフセットを検討している。

3.2.6 観光を通じた自然保護への料金支払い

サバ州観光局によれば、サバ州には観光事業者を通じて自然保護への料金を支払ういくつかの革新的な仕組みがある。キナバタンガン命の回廊観光事業者協会（KiTA）は、自然保護のために観光客一泊一人あたりRM10の支払いを会員企業に課している。徴収された金は、WWFが管理する基金にプールされ、キナバタンガン地域で実施中の保全活動に使われている。

観光客の支払いによる保護区管理のもう一つの事例は、ランカヤン島の保全である。ランカヤン島は、サバ州野生生物保護法で定めるスグッド諸島海洋公園（45,000ヘクタール）内の三つの島の一つであるが、REEFガーディアンという民間の非営利団体により管理されている。彼らはスキューバダイビングなどに島を訪れる観光客から料金を徴収し、海洋生態系・ウミガメの研究・保護にあてている。

サバ州では、サバ公園局、森林局、野生生物局などの政府機関が管理する保護区において、訪問客からの一般的な料金徴収も行われている。多くの場合、これらの料金は、入園料ではなく「自然保護料」（conservation fee）と呼ぶことで、その使用目的を明確にしている。なお、サバ公園局によれば、人気の高いキナバル公園や、トゥンク・アブドゥル・ラーマン海洋公園でも、訪問者から徴収する料金の総額は、公園管理の総費用を賄うにはとうてい及ばない。時折、連邦政府自然資源環境省（MONRE）はこの点を誤解して、サバ公園局に対し、訪問客からの保護料徴収により、全管理費用を賄う持続的な資金徴収の仕組みを期待するが、その是非は議論の余地がある。公園局としては、観光客へのリクリエーションサービスは、公園が提供する多様な生態系サービスの一部に過ぎないのであるから、公園管理の総費用を観光客からの保護領徴収のみによって賄う必要はないと考えている。

本調査で面談取材したいくつかの関係機関からは、サバ州からの出国時に料金徴収することで、サバ州への訪問客から自然保護料を徴収することを提案が聞かれた。このような制度はインドネシアで採用されており、このため同国では出国場所によって徴収料金が異なっている。また、自然保護料を、州全域や特定地域の全てのホテルで一室あたり一泊いくらかで徴収するという提案も聞かれた。世界文化遺産を有するマラ

ツカ州では、そのような制度を導入しており、「遺産税」(heritage tax)として、一室・一泊あたり2リンギットが、州内のあらゆるホテル・宿泊施設で徴収されている。

サバ州観光局からは、PESの実施可能性は、サービス利用者として支払いを期待する市場セグメントによるとの意見が聞かれた。例えば日本の観光市場は、植林やサンゴ復元などの自然保護への協力に肯定的な態度をとる。

3.2.7 RSPO およびパーム油認証

「持続可能なパーム油のための円卓会議」(RSPO)やその他の組織によるパーム油の認定は、サバ州のアブラヤシ産業に導入されている。サバ州では、サイム・ダービー、IOI、KRK等RSPO会員企業の数30で、会員企業数は増加している。マレーシアパーム油協会(MPOA)はRSPOの事務局である。RSPOによる認証以外に、マレーシアで作られた別の認証機関マレーシアパーム油委員会(MSPO)があり、これによる認証はマレーシアで必須になりつつある。RSPOによる認証は任意であり、主に大企業が認証取得するが、MSPOによる認証はサバ州の小さな農園を含むすべてのアブラヤシ農園に適用される。

IOI、サイム・ダービー、FELDA グローバルベンチャーズなどの大規模なパーム油生産者は、ヨーロッパにも独自の生産設備を持っている。そしてEU諸国では、消費者はRSPO認証なしの製品を購入しない傾向にある。これらの大企業はEU市場で製品を販売するためにRSPO認証を取得せざるを得ず、ほぼすべての所有農園についてRSPO認証を取得している。一方、中国、インド、パキスタンの市場は、RSPO認証なしにパーム油を購入する。このため小規模アブラヤシ農園は、RSPO認証なしで主に中国に自社製品を販売している。KRKなど、より大きい企業では、国内市場・中国市場向けの工場と、EU市場向けのRSPO認証を得た工場の両方を所有している物もある。RSPOのための工場と、国内市場のための工場が隣接しているという例もある。現在では、中規模の企業もRSPOの認証取得する傾向にある。

MPOAの見解では、RSPO認証の条件はより厳しく柔軟性のないものになってきている。RSPOの関心は、今や環境だけでなく、人権、児童労働、労働者の安全などにも広がっている。このようなRSPOの認証基準の変化から、マレーシアのアブラヤシ産業は、RSPOの視点が偏っていると捉え、欧州の植物油産業を保護するという隠された意図があるのではとの疑念も持っている。このことから、MPOAは近年RSPO事務局を辞退することも検討した。インドネシアでは、RSPOが認証基準の一つとして、労働者の生活条件を適用しようとしたことに反発して、同国のパーム油企業はRSPOを脱会し、インドネシア持続的パーム油財団(ISPO)という自前の認証機関を設立して主に中国やインドにパーム油を売っている。

MPOAは、マレーシア独自のMSPO認証では、EU市場に通用しないことを理解している。他方、米国市場はRSPOによるパーム油認証を強く求めない。パーム油認証を巡る状況は、過去に森林認証で起きたことに近い。マレーシアの木材産業には国レベルと国際レベルの2つの森林認証のオプションがあるのと同様、異なる市場の要求に対応して、パーム油生産者らは異なるパーム油認証のオプションを選択している。

3.2.8 固定価格買い取り制度(FIT)のための電力料金への課徴金(「再生可能エネルギー基金」)

マレーシアにおける再生可能エネルギーの利用を促進するために、政府は2011年の再生可能エネルギー法のもと、「固定価格買い取り制度」(FIT)の一部として新しい資金調達メカニズムを導入した。2014年1月1日から発行したこのメカニズムでは、政府は消費者の毎月の電気料金に追加の1.6%を課し(図9)、この課徴金は「再生可

能エネルギー基金」に入金される。なお月の電力消費量が 300kWh 以下の場合、この課徴金の支払いは免除される。

No. Jangka	Gdn	Dahulu	Semasa	Kegunaan
99025532	1.0000	2614.00	4008.00	1394.00 KWH
99025532	1.0000	810.00	1261.00	451.00 KUARH

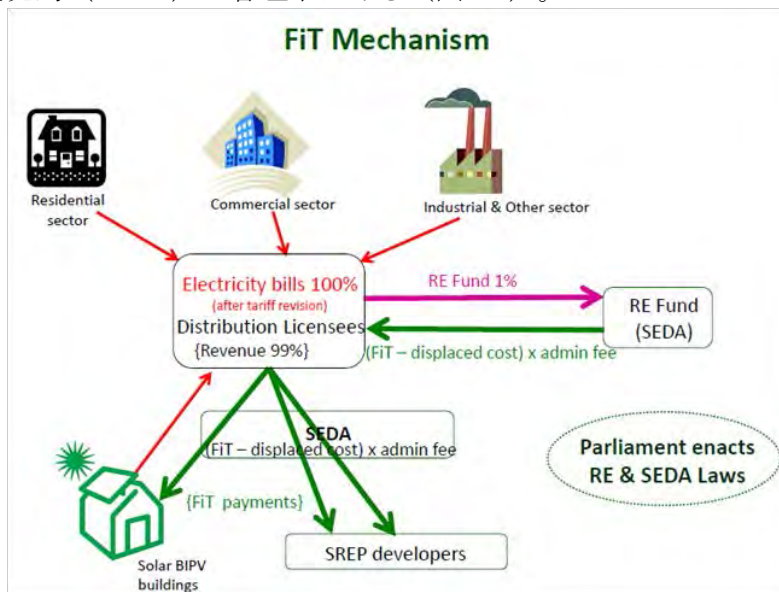
Caj	Unit	Kadar	Amaun
BLOK KEGUNAAN ELEK.	100.00	0.175 RM	17.50
	100.00	0.185 RM	18.50
	100.00	0.330 RM	33.00
	200.00	0.445 RM	89.00
	500.00	0.450 RM	225.00
	784.00	0.470 RM	368.48
KUMPULAN WANG TENAGA BOLEH BAHARU			RM 9.09
PENGGUNAAN			-0.02

Amaun Elektrik	RM	577.27	Bil Semasa	RM	577.25
Lain-lain Caj	RM	0.00	Tunggakan	RM	0.05
Anggrn Pelarasan	RM	0.00	Cag. Tambahan	RM	0.00
Pelbagai	RM	0.00	Jum. Perlu Dibyr	RM	577.30

No. Telefon Aduan Kerosakan : 15454
 No. Telefon Pertanyaan Bil : 088-282144

図 9 月毎の電気料金請求書における「再生可能エネルギー基金」課徴金の表示

再生可能エネルギー基金に集められた課徴金は、埋立地ガス、バイオガス、バイオマス、太陽光、小水力への支払いに使われる。再生可能エネルギー基金は持続可能なエネルギー開発局（SEDA）の管理下にある（図 10）。



出典: <http://ecoideal.com.my/2011/06/feed-in-tariff-fit-set-to-drive-renewable-energy-development-in-malaysia/>

図 10 FiT の仕組み

2014 年 3 月までに、サバ州と半島部で合計 2,268 件の再生可能エネルギー事業が FiT のもと承認され、これらから 188.3 メガワットの電力が国内の送電網に送られた。これは電力供給量全体の 1%にあたる。その内訳は太陽光発電が 108.57 メガワット、バイオガス発電が 52.3 メガワット、小規模水力発電が 15.7 メガワット、バイオガスが

則（アクセスと利益配分）は 2011 年に州閣議で承認され、SaBC は CHM を開発に取り組んでいた。

本調査で ABS の仕組み作りについて最近の状況を SaBC に確認したところ、ABS の基本的枠組みを定めるサバ州生物多様性条例は現在改正作業がすすめられており、改訂案が本年度 2015 年の第 1 回州議会で提案される予定である。この改訂に伴い、ABS にかかる新たな実施細則も準備中で、州閣議での承認が予定されており、条例改訂案、実施細則案は現在州検事当局が確認中である。同条例の改訂は、主に SaBC の機能についての部分である。

第4章 クロッカー山脈生物圏保護区（CRBR）の課題

4.1 CRBR の緩衝地域・移行地域の管理における課題

4.1.1 CRBR の管理目標

CRBR の管理計画は現在策定の過程にある。2014 年 12 月 10 日、サバ公園局は、CRBR 管理に係る関係者分析と目的分析を行うために、関係諸機関を招いてワークショップを開催した。同ワークショップで行った目的分析の結果、ワークショップ参加者は CRBR 管理の中心目的とそれを達成するための直接手段として、以下に合意した。ただし、本計画はまだ文書化されておらず公園局による正式な承認はされていない。

中心目的：

- CRBR の生物多様性（遺伝的多様性を含む）、生態系および文化的多様性を保全する。

上記中心目的を達成するための直接手段

- 中核地域において生態系保全を改善する。
- 緩衝地域と移行地域において、コミュニティの持続可能な生計を振興する。
- CRBR における研究教育を振興する。

4.1.2 人口・村落

CRBR は、サバ州西部に位置し、行政区として 8 つの郡とコタキナバル市と重なっている（図 11）。表 2 に示すとおり、8 郡とコタキナバル市の人口は 1,254,700 人（2010 年）であるが、コタキナバル市と 8 郡において人口が密集する都市部は、海岸沿いにあり、それらは CRBR の境界外である。1991 年からの 20 年間で同地域の人口はほぼ倍増している。

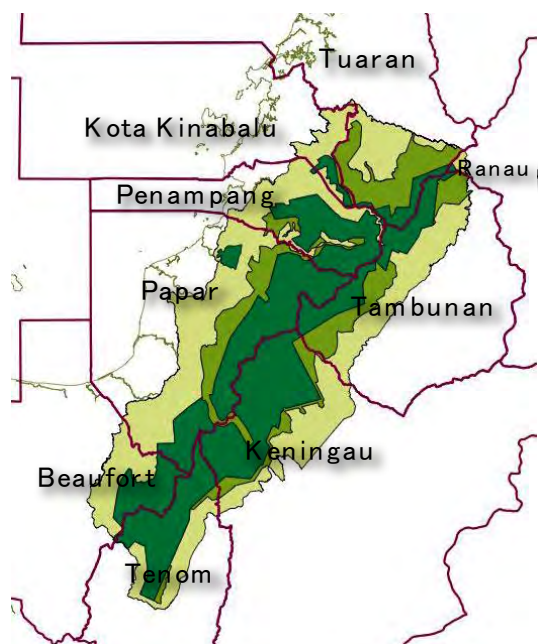


図 11 CRBR と重なる行政区（8 郡とコタキナバル市）

表 2 CRBR に重なる 8 郡及びコタキナバル市の人口

Administrative areas	Area (km ²)	Population		
		1991	2000	2010
Penampang	466	86,941	137,002	159,600
Papar	1,243	59,473	92,451	111,400
Beaufort	1,735	48,742	64,756	75,900
Tenom	2,409	37,954	48,353	54,400
Keningau	3,533	88,456	155,069	195,700
Tambunan	1,347	19,726	29,294	35,000
Ranau	2,978	49,358	74,456	88,800
Tuaran	1,166	63,995	84,974	97,800
Subtotal of 8 Districts	14,877	456,636	688,355	818,600
Kota Kinabalu	350	209,175	372,047	436,100
Total of the 9 administrative areas	15,227	665,811	1,060,402	1,254,700
Sabah (whole)	73,711	1,743,685	2,603,485	3,214,200

出典: Data of the National Census in 2010 provided by Beaufort District Office in 2011, Sabah Parks (2004)

表 3 に各行政区内で CRBR が占める面積および CRBR 内の人口を示す。CRBR 内に限った人口データを得られなかったコタキナバル市を除けば、8 郡の CRBR 内の住民の数は約 99,000 人であり、これは 8 郡の総人口の 12.1 % を占めている。

表 3 CRBR 内の人口ほか

Administrative areas	Area (km ²)		Population	
	CRBR (% in the area of the district/city)	Total area of District/City	CRBR	Total population in the district (2010)
Penampang		466	16,162 (10.1%)	159,600
Papar		1,243	22,320 (20.0%)	111,400
Beaufort		1,735	2,053 (2.8%)	74,600
Tenom		2,409	4,645 (8.5%)	54,400
Keningau		3,533	28,404 (14.5%)	195,700
Tambunan		1,347	17,571 (51.7%)	34,000
Ranau		2,978	767 (0.9%)	88,800
Tuaran		1,166	7,179 (7.3%)	97,800
Subtotal of 8 Districts		14,877	99,101 (12.1%)	818,600
Kota Kinabalu		350	N/A	447,200
Total	3,505.84 (23%)	15,227	N/A	1,254,700

表 4 CRBR 内の村落数

DISTRICT	PEN AMP ANG	PAP AR	BEAU FORT	TE NO M	KENI NGA U	TAMB UNA N	RA NA U	TUAR AN	KOTA KINA BALU	TO TAL
Number of villages	44	73	24	29	92	57	2	61	17	399
Buffer zone	9	2	0	2	1	12	0	26	0	52
Transition area	32	54	16	26	50	38	2	29	17	264
Core area	0	0	0	1	1	0	0	0	0	2
Location unknown	3	17	8	0	39	6	0	7	0	80

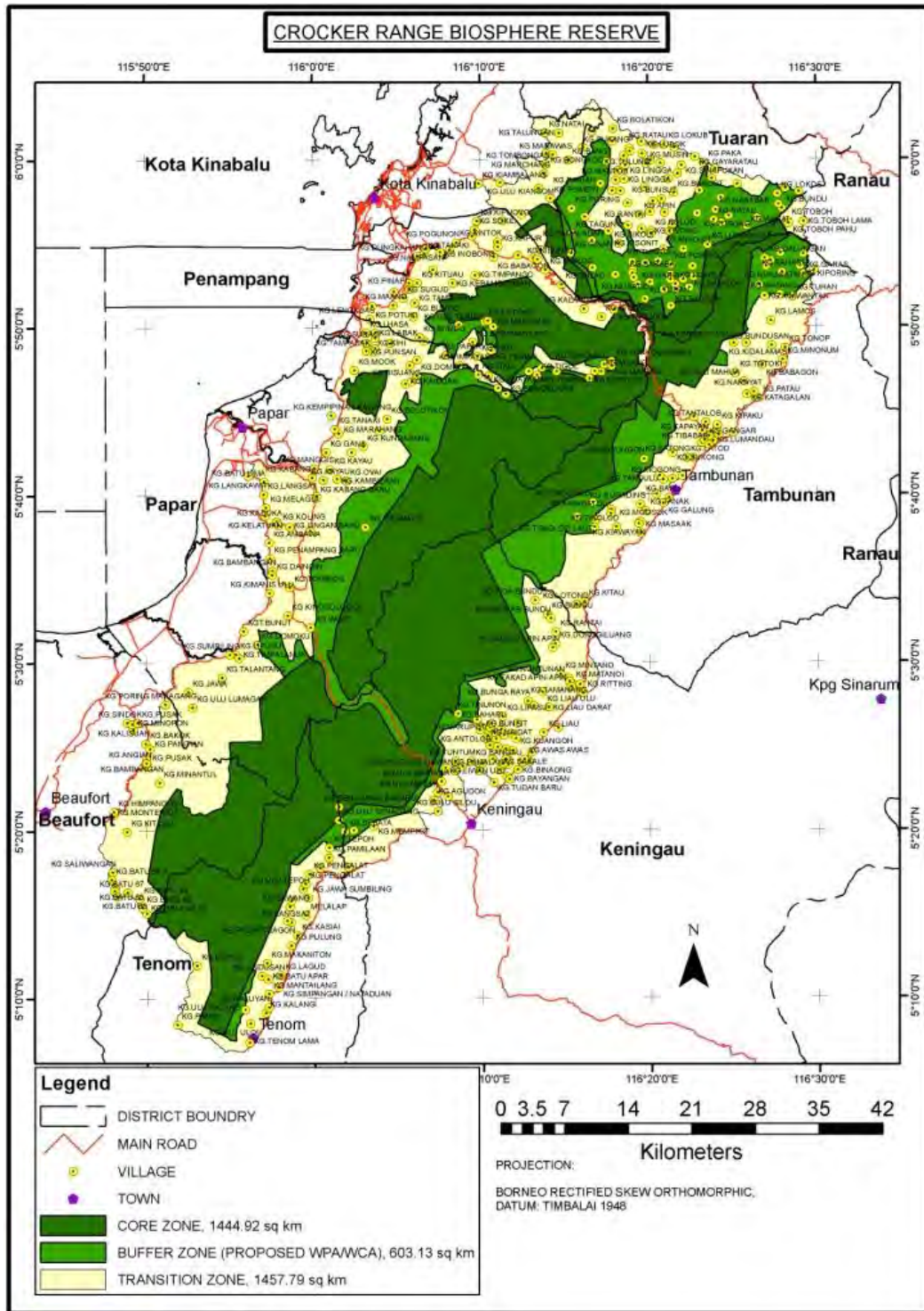


図 12 CRBR 内の村落の配置

表 4 に示すとおり CRBR 境界内で JKKK が政府に登録されている村落の数は 399 カ村であり、図 12 にはそれら村落の位置を示す。

4.1.3 貧困率

2011年に、政府の貧困データベースである e-Kasih を用いて CRBR 内の貧困世帯を確認したところ、1,895 世帯の貧困世帯が確認され、政府による貧困撲滅スキームの対象とされていた（表 5）。この世帯数は、CRBR 全体の世帯数（19,820 世帯）の 9.6% を占める。

表 5 e-Kasih（貧困データベース）に登録されている貧困世帯数

DISTRICT	PENAMPANG	PAPAR	BEAUFORT	TENOM	KENINGAU	TAMBUKUNAN	RANAU	TUARAN	KOTAKINABALU	TOTAL
Number of e-Kasih Registered households										
hardcore poor	34	22	1	15	73	148	0	1	2	296
poor	159	162	6	82	155	365	0	46	0	975
moderately poor	90	181	9	55	52	199	0	34	4	624
Total	283	365	16	152	280	712	0	81	6	1,895
Ratio in the all households in CRBR	8.8%	8.2%	3.9%	16.4%	4.9%	20.3%	0.0%	5.6%		9.6%

出典: Sabah Development Office から 2011 年に得られた e-Kasih データ. Department of Statistics Malaysia, Sabah, 2009.

4.1.4 緩衝地域および移行地域で実施される生計支援スキーム

上記の通り、CRBR 内には 399 ヲ村の村落があり、少なくとも 99,000 人が居住しており、全国平均と比較すると貧困世帯も多い。第 10 次マレーシア計画に沿って、2015 年までに政府は極貧の撲滅と貧困世帯の減少を目指しており、様々な農村開発スキームを実施している。上記 CRBR の目的と合致するような、環境影響の少ない生計向上策を支援する散見される一方、CRBR の自然生態系に負の影響を与えるリスクを持つスキームもあり、それらについては実施のモニタリングが必要とされる（添付資料 3）。

サバ州農村開発省（KPLB）は、CRBR を含めサバ州における貧困撲滅と農村開発に責任を負っている。8 つの郡（プナンパン、トゥアラン、ラナウ、タンブナン、ケニンガウ、テノム、ボーフォート、パパール）の郡開発事務所（district offices）は KPLB の下部組織であり、各郡の CRBR との重複部分での貧困撲滅・農村開発事業の実施モニタリングを行っている。コタキナバル市と CRBR との重複部分については、コタキナバル市役所が貧困撲滅・農村開発に責任を負う。

4.2 州レベルの開発計画のための自然資本としての CRBR

CRBR は、サバ開発回廊ブループリントに示された開発計画を支える自然資本としても重要である。図 13 に示すように CRBR は 4 つの開発ゾーン（中小企業アグロフードゾーン、内陸アグロポリタンゾーン、観光・高地農業ゾーン、サバ工業課ゾーン）と重なっており、その間に位置する。

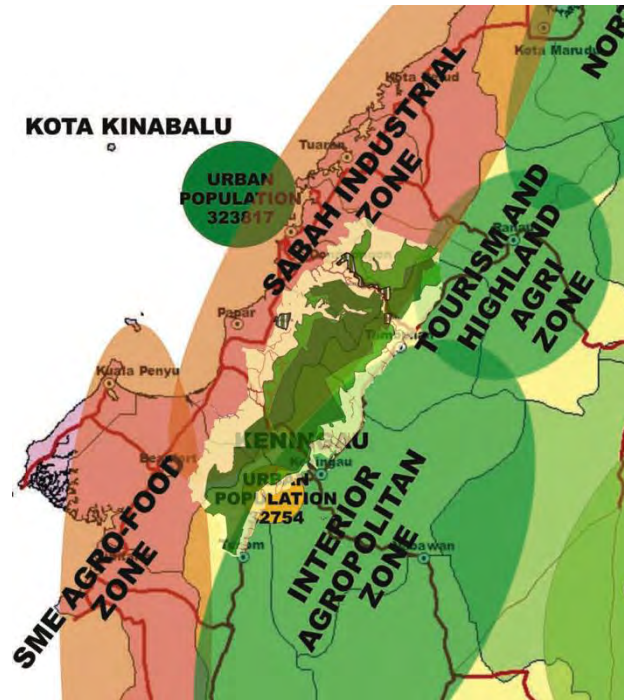


図 13 Zoning in Sabah Development Corridor and CRBR

4.3 保全すべき生態系サービス

CRBR において重要で、PES や経済手法による保全対象として検討しうる生態系サービスを以下に示す。

- 水供給（安定した流量、水質）
- 洪水制御、土砂災害防止
- 炭素隔離
- リクリエーション（景観、希少種等）
- 遺伝資源

上記生態系サービスを維持する土地利用形態として以下があげられる。

- 既存林の保全
- 植林ないし既存林のエンリッチメント
- 十分な休耕期間をとった伝統的焼き畑
- 水田
- タガル・システム
- 生態系サービスを維持・向上させるその他の代替生計手段

4.4 CRBR の集水域サービスへの支払いと経済手法

4.4.1 CRBR の集水域サービス

さまざまな関連機関や関係者が指摘する CRBR の最も重要な生態系サービスの一つが水供給と水の調節サービスである。それはまず CRBR に居住する 99,000 人に安定した流量の水質の良い水を提供し、それは家庭での水利用や農業やその他の生産のために利用される。そのみならず CRBR の水供給サービスは CRBR 境界外の下流域住民にも利用されている（CRBR 下流域住民はサバ州の全人口の約 3 分の 1 である）。更

に、CRBR による水流量調節も洪水などの災害の危険性を下げることによって、人々に利益をもたらす。状態の良い上流域の森林は一般的に、河川による浸食と堆積物の集積を制御し、サンゴなどの海洋生態系の保全や水産資源の維持に貢献する。

このような集水域サービスは CRBR における森林生態系によって維持されている。言い換えれば、同サービスは CRBR の中核地域（クロッカー山脈公園と 3 つ森林保護区）においては、サバ公園局とサバ州森林局による森林保全により維持され、また緩衝地域と移行地域については、土地所有者らによる森林保全と持続可能な土地利用によって維持されている。従って、サバ公園局、森林局、土地所有者を集水域サービスの提供者とみなすことができ、下流で家庭用、灌漑用の水を利用し、洪水・災害制御の便益を得ている人々を、サービス利用者とみなすことができる（図 14）。

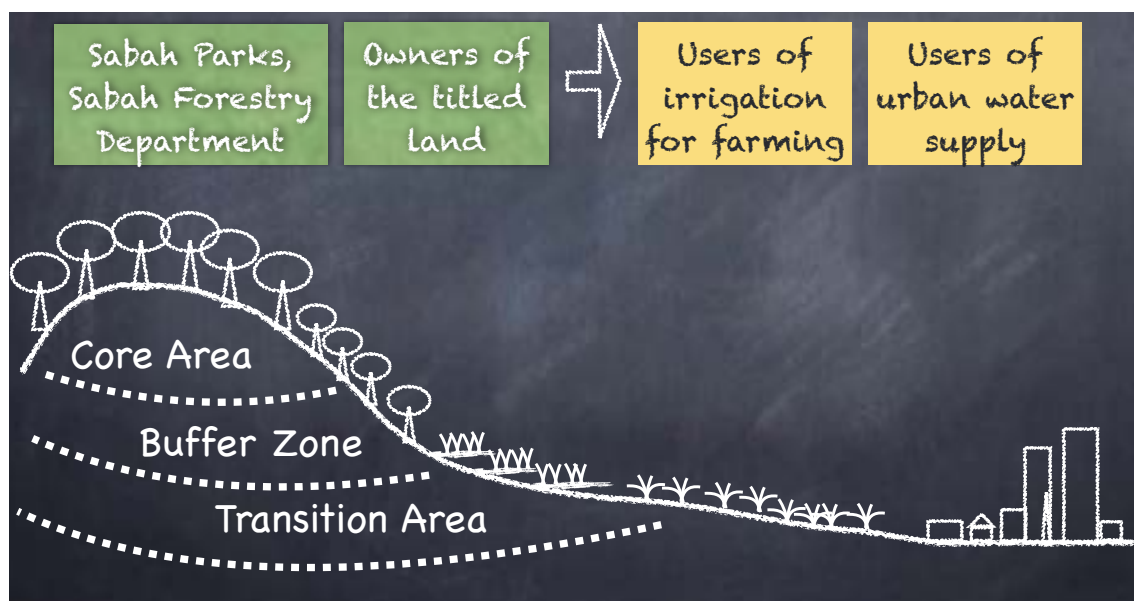
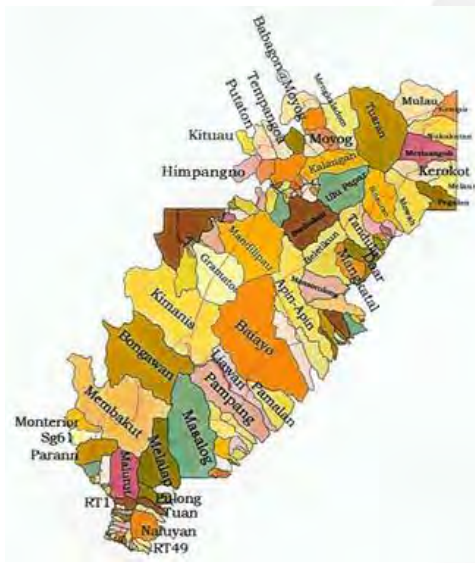


図 14 CRBR 集水域サービスの提供者と利用者

クロッカー山脈公園（CRP）は 17 の集水域を含み（図 15）、CRBR はより多くの集水域を含んでいる（図 16）。2009 年、サバ公園局は CRP から流れ出る 18 の河川の総流出水量を算出した（表 6）。2013 年、サバ公園局陸域公園管理長のマイポール・スパイト氏は生物多様性 ASEAN センター（ACB）が開催した PES に関するワークショップに参加し、CRP が提供する水供給サービスについての PES 案を発表した。総流出量に、単位流出量あたりの貨幣価値を乗ずることにより、水供給サービスの価値を 1 日辺り 700 リンギットと見積もっている。



Source: Greer (1998)

Area	River	Size of catchment area (km ²)	% of park area ¹	Sub-catchment	Size of sub-catchment area (km ²)
West coast	Tuaran	37	2.6	Tuaran	31
				Mulau	6
	Moyog	59	4.2	Moyog	59
	Papar	491	35.1	Upper Papar	398
				Mandalipau	93
	Kimanis	64	4.6	Kimanis	64
Bongawan	54	3.9	Bongawan	54	
Membakut	93	6.6	Membakut	93	
Interior plain	Pegalan-Padas	538	38.4	Sinulan	34
				Bolotikon	37
				Apin-Apin	41
				Bayayo	180
				Pampang	59
				Masalong	81
				Melalap	59
Malutut	47				
North east	Liwagu	12	0.9	Nukakatan	12
Total		1348²	96.3 %		1348²

¹Percentage of total area of the park (1399 km²); ²Total catchment area excluding small catchment areas

図 15 クロッカー公園 (CRP) と重なる 17 の集水域

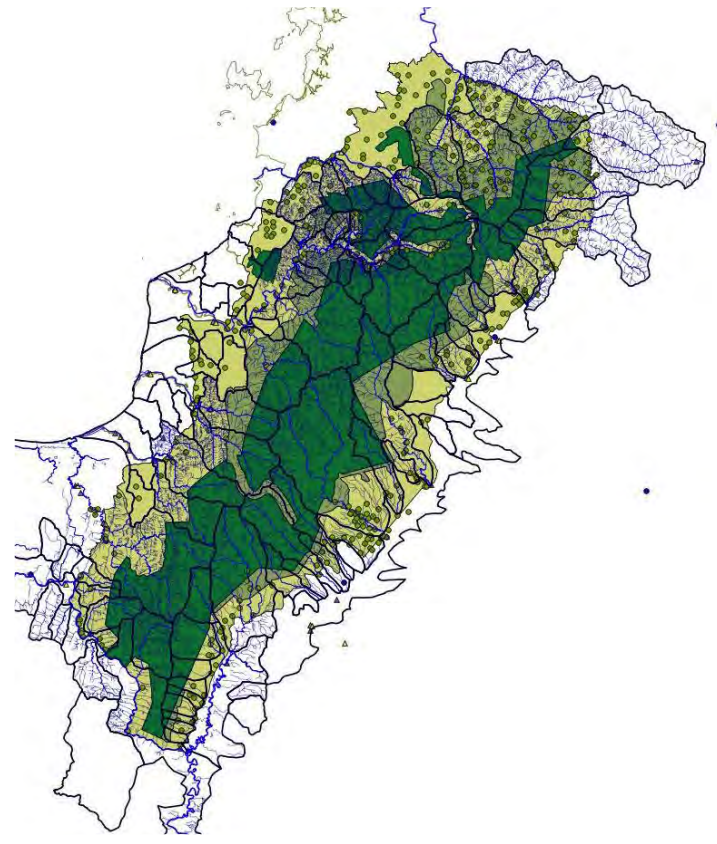


図 16 CRBR と重なる集水域

表 6 クロッカー山脈公園から流出する河川の水量（2009 年）

No.	River	Water Vol (L) in 1 minute	Water Vol (L) in an hour	Water Vol in 1 day
Penampang District*				
1.	Sg. Ulu Papar	610,200	36,612,000	878,688,000
2.	Sg. Ponobukan	364,800	21,888,000	525,312,000
3.	Sg. Buayan	241,200	14,472,000	347,328,000
4.	Sg. Terian	75,000	4,500,000	108,000,000
Total				1,859,328,000 billion litter
No.	River	Total water (L) in 1 minute	Total water (L) in an hour	Total (L) in 1 day
Papar/Beaufort* District				
1.	Sg. Bongawan**	169,500	10,170,000	391,392,000
2.	Sg. Kimanis	229,880	13,788,000	330,912,000
3.	Sg. Membakut	201,000	12,060,000	289,440,000
Total				1,011,744,000 billion litter
No.	River	Total water (L) in 1 minute	Total water (L) in an hour	Total (L) in 1 day
Keningau* District				
1.	Sg. Baiayo	410,400	24,624,000	590,976,000
2.	Sg. Pampang	121,920	7,315,200	175,564,000
3.	Sg. Apin-apin	75,000	4,500,000	108,000,000
4.	Sg. Liawan	62,400	3,744,000	89,856,000
5.	Sg. Keritan	22,200	1,332,000	31,968,000
Total				996,364,000 billion litter
No.	River	Total water (L) in 1 minute	Total water (L) in an hour	Total (L) in 1 day
Tambunan* District				
1.	Sg. Tondulu	90,600	5,436,000	130,464,000
2.	Sg. Tikolod	43,200	2,592,000	62,208,000
3.	Sg. Bolotikon	37,800	2,268,000	54,432,000
4.	Sg. Mahua	29,400	1,764,000	42,336,000
Total				289,440,000 billion litter
No.	River	Total water (L) in 1 minute	Total water (L) in an hour	Total (L) in 1 day
Tenom* District				
1.	Sg. Mosolog	151,800	9,108,000	218,592,000
2.	Sg. Melalap	15,000	900,000	2,160,000
Total				220,752,000 billion litter
Total water volume of Crocker Range Park				4,377,628,000 billion water

Note:

*Measurement procedure Cross-Section

**Average Water Volume at Sg. Bongawan (downstream and upstream)

4.4.2 タガル・システムの適用

CRBR の緩衝地域・移行地域はタガル・システムの起源地を含んでいる。2011 年時点で、CRBR 内の 76 カ村（総村落数の 19%）がタガル・システムを採用している(表 7)。上で論じたように、タガル・システムは実態として PES や生物多様性保全のための経

濟手法としての側面を持っている。更に、タガル・システムは本来河川内の漁業資源の保全を目的として導入されたが、その実施に伴い設立される村落レベルの組織・制度は、潜在的に集水域サービス保全のための他の PES メカニズムにも活用できる可能性がある。

表 7 CRBR 内でタガル・システムを採用している村落（2011 年時点）

DISTRICT	PENA MPAN G	PAPA R	BEAU FORT	TENO M	KENIN GAU	TAMB UNAN	RANAU	TUAR AN	KOTA KINA BALU	TOTA L
Number of villages covered by Tagal programme	14	20	0	2	6	17	2	12	3	76
Ratio to all villages in CRBR	31.8%	27.4%	0.0%	6.9%	6.5%	29.8%	100.0%	19.7%	17.6%	19.0%

第5章 CRBR 管理に向けた PES およびその他の経済手法の提案

以下の提案は、聞き取り、文献調査、現地調査等を通じ確認された現状に照らして、CRBR 管理に有効で、かつ実現可能性のある経済手法を取りまとめたものである。経済手法の制度設計には、関連政府機関、地域コミュニティ、サービスへの支払いに関わる民間セクター、有用な国際枠組みを提供する国際機関はじめ、多くの利害関係者間の合意が必要で、時間と労力を要するものである。以下の提案の実現までには、その詳細計画と実施可能性について、今後関係者間で更なる協議を行うことが求められる。なお、以下の 10 の提案の順序は、SDBEC の枠組み（事業機関、利用可能な組織・制度と資源）の中での各提案の緊急性・実施可能性の順序に沿っている。

5.1 提案 1：CRBR の集水域サービスへの支払いとパイロット事業

5.1.1 集水域サービスへの支払いの根拠法

(1) 水資源条例

サバ州水資源条例（1998 年）の 52(2)条には以下の記載がある。

52.(2) 水資源局長は、規則に従って、水管理料および水資源局長ないし局長が認定した者による管理費にあたる料金を、以下の者から徴収することができる。

- (a) 本条例 IV 部の定めに基づくライセンス発給を受けた者
- (b) 官報掲載された氾濫原の土地所有者ないし土地占有者
- (c) 水源保護地域により便益を得ている者
- (d) 水源保全地域の土地所有者ないし土地占有者

上記「(c)水源保護地域により便益を得ている者」は、上流域が水源保護地域として官報掲載されることを条件として、CRBR の集水域サービスの利用者に当てはまる。実際には、サバ州政府はすでに同条例で定める水源保護地域・水源保全地域 78 箇所の提案をしているが、いまだ 1 箇所として官報掲載されていない。

CRBR の緩衝地域は、灌漑排水局が提案する水源保護地域に沿って設定したものである。ひとたびこれらの水源保護地域・水源保全地域が官報掲載されれば、法的な制限がかかる。水源保護地域では、土地の割譲は認められず、いかなる者にも新規建築、農園開発、土地開墾は認められない。水源保全地域では土地の割譲は認められるが、水資源局は土地所有者・土地占有者に対して、特定の土地利用の禁止を通知できる。

(2) 公園法

サバ州公園法（1984 年）の 45.(2)(f)条には以下の定めがある。

45.(2)(f) (理事会は) 本条例に定める宿泊、アメニティ、提供サービスの利用者から料金を徴収することができる。

CRP の集水域サービスを、上記条文にある「提供サービス」と見なすことにより、公園局が水利用料を徴収できると解釈をする者も公園局職員の中にいた³。しかし、水局の見解では、この条文はそのままでは集水域サービスの料金徴収の法的根拠とは見

³ 実態として、サバ公園局は既にキナバル公園内から取水して商業目的に水を利用しているホテルやレストランから水利用料金を徴収している。

なせず、水資源局のみが水資源条例に基づき集水域サービスについて料金を徴収できるとのことであった⁴。

5.1.2 ババゴンドム集水域でのパイロット事業：背景

現在、州水資源委員会の事務局でもあるサバ州天然資源庁（NRO）は、水資源管理条例に基づき、コタキナバル市水道の水源であるババゴンドムの集水域を水源保護地域・水源保全地域として官報掲載する準備を進めている。NRO の担当職員は 2014 年 10 月～11 月に JICA が実施した本邦研修に参加しており、研修終了時に作成したアクションプランに同官報掲載の計画案が示された。計画案を示すプレゼンスライドを添付資料 4 に示す。

ババゴンドムの集水域サービスへの PES メカニズムの適用は、同集水域内の土地所有者をはじめとするステークホルダーから官報掲載への合意を得るためのツールともなり得る。ババゴンドム集水域が官報掲載されれば、それは正式な水源保護地域・水源保全地域指定の初めての事例となり、他地域での水源保護地域・水源保全地域指定のためのモデルとなる。

ババゴンドム集水域の土地所有状況と、計画されている水源保護地域・水源保全地域を、以下ならびに図 17 に示す。

ババゴンドム集水域面積: 3,114 ヘクタール
同集水域土地所有者数: 322 人
同集水域内の私有地面積: 1,324 ヘクタール
ダム湖・ダムの面積: 155 ヘクタール
同集水域内の保護林（クロッカー山脈保護林）面積: 705 ヘクタール
同集水域内の州有地（保護林除く）面積: 930 ヘクタール
土地私有化申請の数：79 件（5 件は承認済み）

ババゴンドムの集水域全域は CRBR に含まれている。クロッカー山脈保護林は CRBR の中核地域であるが、その一部が同集水域にかかっている。保護林以外の、私有地を含む同州水域の残りの部分は、CRBR の移行地域（および緩衝地域）である。BBEC フェーズ 2 のもと準備された CRBR の GIS で、周辺村落の座標を参照したところ、同州水域には独自の JKKK を有する 4 村（カプール村、キントク村、タムパサク村、カランスナン村）が含まれる可能性がある⁵。

⁴ EU-REDD 事業のために、森林局は炭素隔離についての実施細則を作る必要があったが、そのためには炭素隔離が保護林のサービスの一つであると見なす必要があった。それはそれまでの条文の解釈では不十分であり、この目的のために森林条例は 2013 年に改訂されている。

⁵ これらの村落の GIS 上での座標データは現地踏査で再確認したものではないので、不正確である可能性がある。

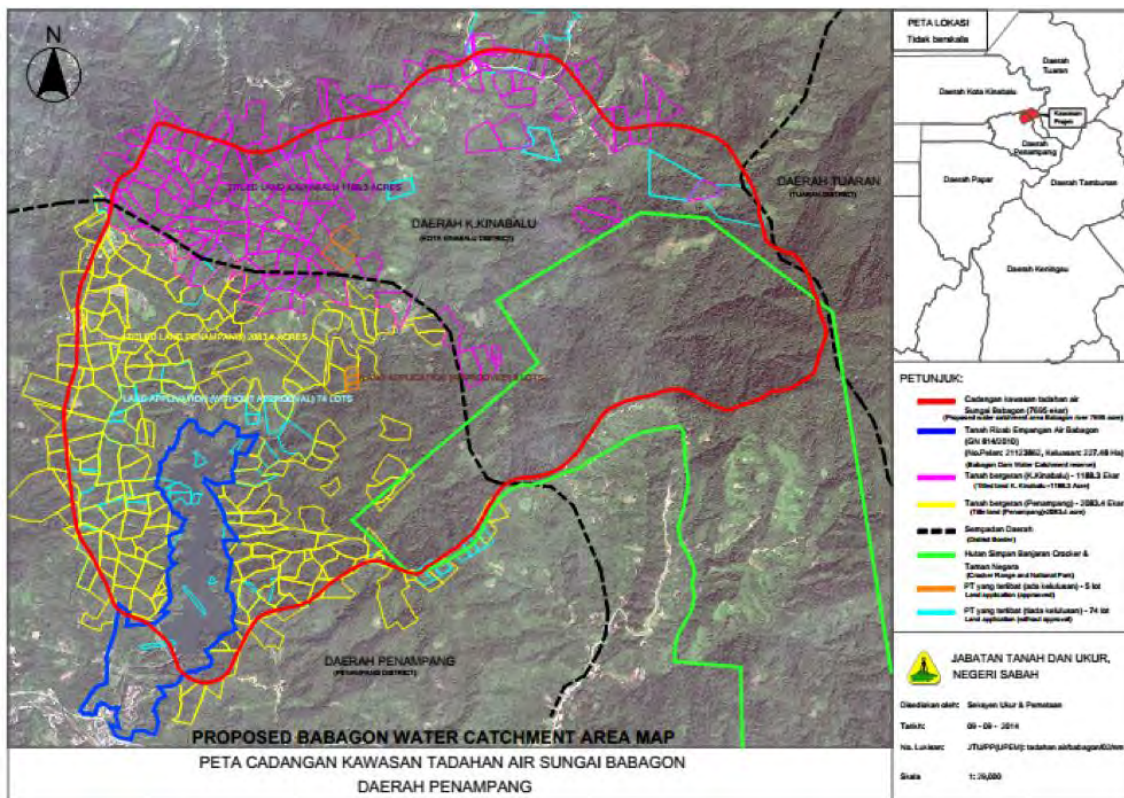


図 17 ババゴンドムの集水域の土地所有形態と水源保護地域・水源保全地域の提案

ババゴンドムはコタキナバル市の水道の主要な水源である。水道局によると、ババゴンドムはコタキナバル市全体の水供給の半分弱（48.4%）⁶をカバーしている。市の人口は、現在では 465,000 人であることから、ババゴンドム集水域からのサービスの受益者はおおよそ 225,000 人と考えられる。ババゴンドムは州政府が所有し、JETAMA 社が水道局のコンセッションにより管理している。

5.1.3 ババゴンドム集水域でのパイロット事業：支払いメカニズム

ババゴンドム集水域にかかる PES の利害関係者としては以下が想定される。

- 集水域内の土地所有者
- ババゴンドムを水源とする水道の利用者
- 水資源局長（灌漑排水局長が兼任）
- 水資源委員会
- 水局
- JETAMA 社（ババゴンドムの管理者として）
- 土地調査局
- 森林局（クロッカー山脈保護林の管理者として）
- サバ公園局（CRBR の管理者として）
- 集水域内の先住民コミュニティを支援する NGO

ババゴンドム集水域への PES のおおまかな仕組みの提案を図 18 に示す。

⁶ 水局からの情報によれば、コタキナバル市の総給水量は 2013 年の 1 日辺り平均で 366,867.69m³/day であり、このうちババゴンドムからの給水が 177,784.66 m³/day (48.4%)となっている。

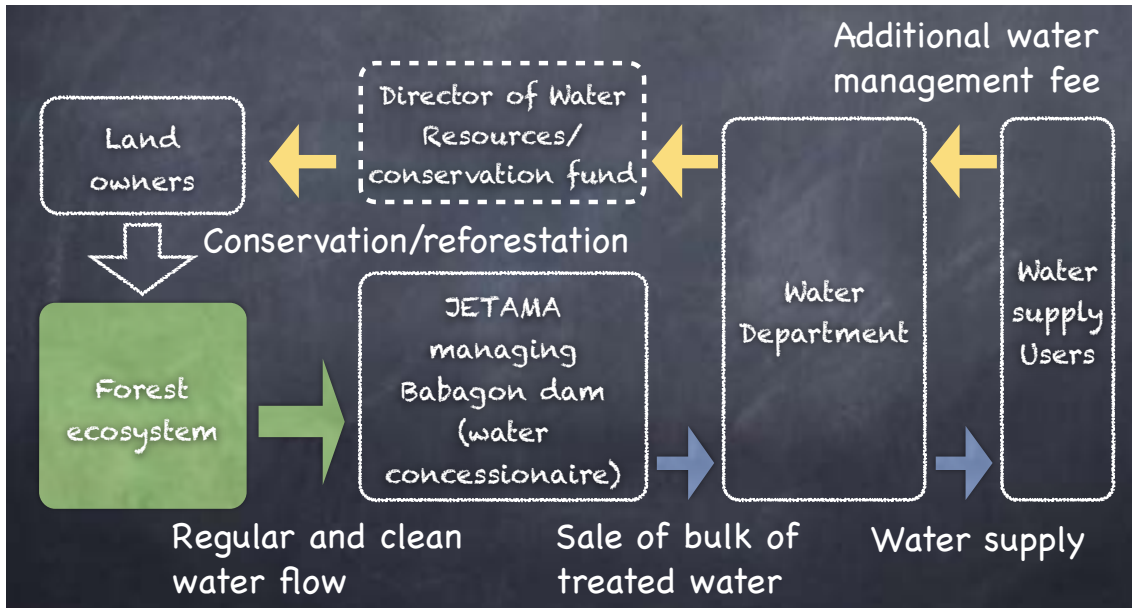


図 18 ババゴンドム集水域への PES の仕組みの提案

上記 PES とともに、規制的手法として、水資源条例に沿った水源保全地域内の私有地における土地利用のための詳細な規制を準備・適用する必要がある。ただし、そのような規制を準備するには時間を要する。異なる土地利用形態や作物毎に規制を準備し、土地所有者との協議を経て合意を得て文書化するという手続きが必要だからである。

このような作業は、BBEC のもと実施されてきたクロッカー山脈公園のコミュニティ・ユース・ゾーン (CUZ) における規制の制定・実施と似通っており、CUZ での地域住民との合意形成プロセス、管理のための組織・制度、土地利用規制の内容を参照することができる。また、キナバル Eco-Linc 事業でのコミュニティ・コンサーブド・エリア (CCA) 設立のための合意プロセスや制度も参照することができる。また PES メカニズムの構築には、川の環境教育プログラム (REEP) などを通じて、集水域の土地所有者や他の利害関係者の意識啓発を行うことも必要である。

5.2 提案 2 : CRBR における農村開発補助金・支援スキームへの介入

5.2.1 課題 : モノカルチャーに偏った補助金の現状

現在サバ州では、地域住民によるアブラヤシやゴムの農園開発や植え替えが、手厚い補助金の対象となっている。農業局によれば、MPOA は TBSPK (小規模農家のための新規植え付けスキーム) というスキームにより、最大 5 ヘクタールのアブラヤシ農園の新規植え付けおよび植え替えのために 1 ヘクタールあたり RM9,000 の補助金を提供している。ゴムの植え付けについても、サバ州ゴム産業委員会 (LIGS) が、苗木、地こしらえ、植え付けなど農園開発費用について、同様な補助金を提供している。

農村開発と貧困撲滅を推進する機関・団体は、一般的に「遊休地」 (idle land) にゴムやアブラヤシ農園を増やそうとする傾向がある。遊休地とは私有化されながらまだ開発されていない土地のことであり、そのような土地に残された森林生態系が提供する生態系サービスは十分に評価されない。このため、これまでアグロポリタンスキームが、貧困撲滅の主流オプションとなっている。これに対し、生態系サービスを維持・改善するような代替生計手段を支援するような補助金スキームは、それほど確立され

ていない。CRBR 内でさえ、KPLB の下 MESEJ とマイクロ MESEJ 事業（貧困世帯の移住とゴム/アブラヤシ農園開発）が実施されている。

5.2.2 生態系サービスへの負のインセンティブの制限

CRBR 内ではアグロポリタンスキーム、モノカルチャー農園のための補助金など、生態系サービスに負の影響を与えてしまう経済インセンティブは制限されるべきである。代わりにタガル・システム、養蜂など有機農業、アグロフォレストリー、ショウガの施肥農法、傾斜地農法、果樹、作物の多様化、手工芸、NTFP など、生態系サービスを維持・強化させるような土地利用について、より多くの補助金・経済インセンティブを提供することが望ましい。これにより、CRBR の緩衝地域と移行地域の土地所有者は、第一のオプション（モノカルチャー開発による所得向上）、第二のオプション（モノカルチャー開発をせず収入も得られない）だけではなく、第三のオプション（モノカルチャー以外の森林保全・持続的土地利用から利益を得る）を選ぶことが容易になる。

CRBR における農村開発のこのような方向性が、ひとたび関係諸機関の合意を得られたならば、農村開発省（KPLB）、郡開発事務所、水産局、農村開発公社（KPD）、農業局、MPOA、LIGS、SLDB など農村開発関連機関には、その地域事務所も含め、常に CRBR の境界を意識してもらい、上記方向性の実践に務めてもらう事が重要である。

5.3 提案 3：トゥダン村での SDBEC パイロット事業への提案

トゥダン村は CRBR の緩衝地帯に位置する小さな村で、その標高は 1,100 メートル以上で村落周辺は急傾斜地が多い。同村は SDBEC のもと CRBR 管理のためのパイロット事業サイトとして選ばれた。同パイロット事業以前には、生計向上のための政府からの支援はほとんどなかった。SDBEC による技術支援を受けて、村人たちは養蜂、傾斜地農法、堆肥作りなどの環境的に持続可能な方法で生計向上を試みている。パイロット事業では、コミュニティ・マッピング、村落および周辺地域の参加型 3D モデル化など、参加型開発のツールもさかんに活用されている。

上記提案 1 に示したババゴンドム集水域への PES 導入が成功し、同集水域の水源保護地域・水源保全地域としての官報掲載も達成されれば、それをモデルとして同様の取り組みをトゥダン村でも複製することを検討しうる。森林保全、河畔林の保護、傾斜地農法における土壌保全、休耕期の十分な焼き畑、タガル・システムなどの導入により集水域サービスを維持し、それに対する支払いの仕組みを、水源管理条例を根拠に作るというモデルである。トゥダン村はトゥアラン川の一支流であるリボドン川流域に位置する。トゥアラン川下流域には 5 箇所取水施設があり、トゥアラン郡とコタキナバル市に給水されている。トゥアラン川からコタキナバル市への給水量は 116,782.10m³/day で、これはコタキナバル市の総給水量の 31.8%にあたる。それ以外は、トゥアラン郡に給水され、トゥアラン郡の総給水量のほとんど（99.5%）は、トゥアラン川からの取水である。これらの割合を、単純にコタキナバル市の総人口（465,000 人、2014 年）とトゥアラン郡の総人口（97,800 人、2010 年）に乗じて、トゥアラン川を水源とする水道の受益人数を見積もると、約 245,000 人である。比較的小面積のババゴンドムの集水域がコタキナバル市の半分弱の水道利用者に裨益していることに比較して、トゥアラン川の広大な集水域の中のトゥダン村での土地利用による給水サービスへの貢献はごくわずかなものであろう。しかし、トゥダン村の土地利用と取水口での

水質や流量の関連が明示できるのであれば、ババゴンドム集水域と同様、集水域サービスへの支払いは正当化される。

パイロット調査で始められた代替生計の持続可能性を確保するため、代替生計のための補助金、技術支援などの支援スキームをトゥダンに導入すべきである。添付資料3に示すとおり、政府の農村開発支援には、モノカルチャー農園への補助金・支援のみならず、生態系サービスを維持できる生計支援スキームもある。農業局によれば、サバ州の消費者は追加費用を支払ってまで有機農作物を購入することはない。ただし、価格が同じであれば、有機作物を選ぶ。少なくとも有機農業の導入の初期段階では、通常の作物との価格競争力を持つような有機作物を生産するために、政府からの補助金やその他の援助が得られることは農家にとって大きい助けとなる

トゥダン村の標高は高く、ゴムはこの高度でもまだ生息はするが、生産性は高くない。アブラヤシも、トゥダン村の標高と地形（急斜面地）から栽培できない。トゥダン村が CRBR 管理のパイロットサイトとして選択されたのは、このことも含めて同村が厳しい条件にあることにもよる。本パイロット事業で導入された傾斜地農法は、同じく傾斜地に位置する CRBR 内の他の多くの村落でも適用可能である。他方、CRBR の約 400 ヶ村の村落の大部分は、トゥダン村よりも低い標高に位置し、アブラヤシ農園やゴム農園の開発も可能である。CRBR の管理において、これらの村における重要な課題は、環境インパクトの小さい代替的な生計手段が、その経済便益においてモノカルチャー農園に対抗しうるものなのか、という点である。CRBR 管理のためにトゥダン村以外でもパイロット事業を実施する機会があれば、より低い標高において、代替的な生計手段がモノカルチャー農業と比較して経済面でも遜色ないことが示せれば、CRBR 内の約 400 ヶ村への代替生計手段の普及に大きく貢献する⁷。

5.4 提案 4：観光における自然保護料の導入

CRBR、ないしキナバル山とクロッカー山脈地域、ないしサバ州内の全ての保護区管理への支払いのため、外国人のサバ州からの出国時の自然保護料の徴収、および州内全域か特定地域のホテル・宿泊施設での一律の自然保護料の徴収を検討しうる

また、以下に提案するような CRBR 内の観光アトラクション（民間主導を含む）において、入場時に自然保護料金を徴収し、景観保護などリクリエーションサービス維持への支払いに充てる事も検討しうる。

- CRBR 内村落における「1村1観光アトラクション」事業
- 塩の道
- ラフレシアの開花（収奪的利用にならないよう注意）
- その他の希少生物
- アグロツーリズム（伝統農法、有機農法）
- エスノツーリズム（カダサンドゥスン文化、伝統的生態智）

5.5 提案 5：再生可能電力固定価格買い取り制度（FIT）による小規模水力発電による電力販売

CRBR の保全と流域管理のために、再生可能エネルギー源による電力の固定価格買い取り制度（FIT）の活用を検討しうる。マレーシアの再生可能エネルギー法（2011年）によれば、配電ライセンス保持者（サバ州においてはサバ電力公社）は、認可済

⁷ 本調査と直接の関連はないが、トゥダン村でのパイロット調査の最終報告書には、CRBR 中核地域であるクロッカー山脈保護林とトゥダン村の位置関係についての明示がない（ERE, 2014）。同保護林はトゥダン村の南側と西側に隣接しており、クロッカー山脈公園とトゥダン村の間に位置している。

み事業が生成した再生可能エネルギー源による電力を固定価格で買い取る。同法はまた、固定価格買い取りの対象となる再生可能エネルギー源を指定しており、それらはバイオガス、バイオマス、小規模水力、太陽光である。

CRBR 内に小規模水力発電設備を建設し州の電力網に接続・送電することで、村落の電化のみならず、CRBR の生態系サービスにより発電した電力を販売することが可能となる。発電設備の集水域の土地所有者とコミュニティのメンバーからなる委員会が発電設備を管理し、サバ電力公社に電力を固定価格で販売した収入についての会計を行う。タガル・システムを運用するためにタガル委員会が設立されている場合は、小規模水力発電所の管理のためのそのような組織を利用することも検討しうる。固定価格買い取りによる収入は、発電設備のメンテナンスのためだけでなく、集水域サービスの維持・向上のための森林保全や他の土地利用への支払いに充てることができる。

FiT を活用した、このような PES メカニズムの実現可能性を確認するためには、多くの疑問が残されている。初期投資と運用費、固定価格買い取りによる実際の収入を考慮した上で、このメカニズムが財政面で実行可能であるのか。CRBR 内の遠隔地で小規模水力発電所を建設してもサバ電力公社は電力網への送電線を敷設してくれるのか。発電設備建設のための初期投資に対する財政支援策（補助金、ローン）はあるか⁸。これらの疑問に答えるために、更なる調査と、SEDA をはじめ関係機関との協議が必要になる。

5.6 提案 6 : CRBR PES 基金の設立

本調査で提案される諸 PES 機構をよりアカウンタブルなものとするために、信託基金の設立を検討しうる。「CRBR PES 基金」は、生態系サービス利用者からの支払いの集約的な管理を可能にし、サービス提供者（図 19）への支払いを容易にする。BBEC フェーズ 2 で行われたサバ州の ICCA レビュー調査（Cooke and Vaz, 2011）では、以下の通りサバ州生物多様性条例に定められた生物多様性センター基金を PES のために利用することを提案している。

提案 6

ICCA 基金を設立し、サバ生物多様性センターが管理する。

...

活動: ICCAs のためにサバ州生物多様性センター基金を設立すべきである。サバ州生物多様性評議会は、ICCA s について取り組みを支援するため、国内外のさまざまなソースからの資金調達について議論すべきである。サバ州生物多様性センターは、効果的、公平かつ透明性のある方法で資金管理するために必要なプロセスを確立すべきである。また森林面積の維持や生息地復元のための PES、REDD、その他のスキームを通じて、資金調達にアクセスするためのフレームワークも確立する必要がある。

主管政府機関：サバ州生物多様性センター、ICCA ワーキンググループ

⁸ サバ州とサラワク州の遠隔村において、在マレーシア日本大使館コタキナバル領事事務所、マレーシアサラワク大学農村情報学研究拠点、PACOS トラスト（サバを拠点とする NGO）は、小規模水力発電設備や太陽光発電設備の設立に技術面・資金面で協力してきた。これらの発電設備はベーシック・ヒューマン・ニーズを満たすために農村の電化を目指して建設された。事業によっては、村内の情報通信を支援するための通信センターへの電力供給を目的としていた。州レベルの電力網に余剰電力を販売する電源線の接続例はないものの、固定価格買い取り制度を利用した CRBR における小規模水力発電所について、初期投資と運用についてこれらの援助スキームの活用も検討しうる。

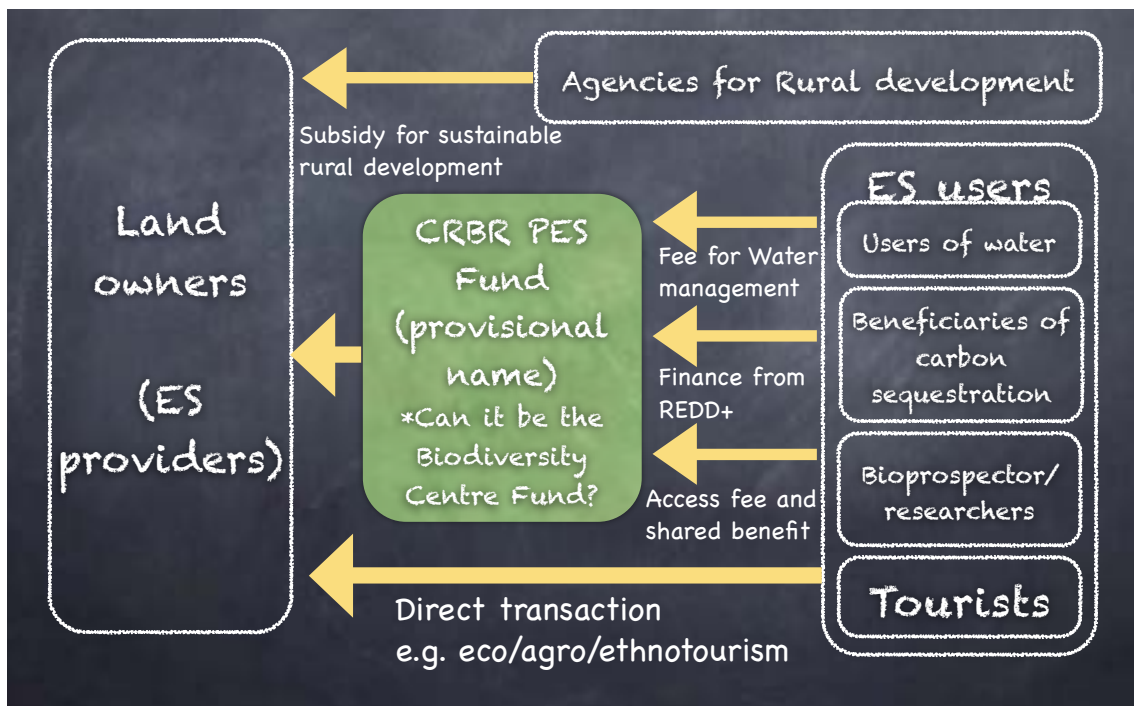


図 19 CRBR PES 基金を通じた支払いの流れ

5.7 提案 7：パーム油産業との協力

アブラヤシ農園の数は、テノム郡とボーフォート郡の CRBR 移行地域内の CRP との境界付近で増加している。アブラヤシ農園の影響は、中核地域の主要な脅威の一つであることから、CRBR の管理のために、農園経営と農園のさらなる拡大への介入が必要とされる。

CRBR におけるパーム油産業の影響を小さくするためには、保全のための肯定的な経済的インセンティブの導入など、キナバタンガン川流域でのパーム油産業に適用されてきた戦略や活動を参照することができる。BBEC フェーズ 2 で策定されたラムサール条約登録湿地管理計画 (SaBC, 2011) では、キナバタンガンとセガマ河川流域における持続可能なパーム油生産のための活動を推進する戦略として、以下が示されている。

- RSPO による認証パーム油 (CSPO) や他のパーム油認証の振興を含む持続可能な生産をめざすとともに、キナバタンガン川とセガマ川流域で生産されるパーム油のブランド化を推進する。パーム油認証だけでなく、ブランド化は、パーム油産業に利益をもたらすと同時に保全を達成するための有効な手段となる。
- マレーシア内外の研究機関からの技術協力による高度な技術を適用し、DOE によるキナバタンガン川水質汚染調査で提案された、バイオガス・バイオマス利用など、キナバタンガン川のアブラヤシ農園と搾油工場からの汚染防止を推進する。
- パーム油産業からの協力を得て、K-COL の下で WWF マレーシアが提案した保全や河畔林のリハビリテーションなどを含む森林の接続性の向上をはかる。

また、上流の森林からの給水サービスに対する、アブラヤシ農園による支払いも議論しうる。大規模農園の場合には、CRBR 内での生物多様性オフセットの適用可能性も検討しうる。

5.8 提案 8 : REDD+による取り組みの導入

REDD+ロードマップに従い、サバ州森林局が主導する活動と連携し、REDD+フレームワークを介した経済的インセンティブを CRBR に導入する。CRBR の中核地域は、脅威のない森林と捉えられ REDD+による取引における経済価値を持たないだろう。CRBR の緩衝地域と移行地域における、炭素の現存量の測定と持続可能な管理による炭素量の変化の見積もりを提案しうる。

現在実施中のキナバル Eco-Linc 事業は、EU REDD プロジェクトのパイロットプロジェクトである。キナバル Eco-Linc 事業の対象地域の南部は、CRBR の緩衝地域と移行地域と重なっている。CRBR 管理においては、キナバル Eco-Linc 事業を、CRBR における REDD+への取り組みのパイロット事業と捉え、ババゴンドム集水域など CRBR の他地域でのこれらの取り組みの複製を検討しうる。

5.9 提案 9 : ABS とバイオプロスペクティング

CRBR 内の森林や村落は、今後改訂されるサバ州生物多様性条例と ABS の実施細則（遺伝資源と TEK からの利益配分）の施行のためのパイロットサイトとなりうる。パイロット事業の内容は生物多様性条例と実施細則の改訂内容によるが、遺伝資源と伝統的生態智（TEK）についての科学研究やバイオプロスペクティングを法制度に沿って受け入れ、今後のサバ州での ABS 運用のモデルとすることを検討しうる。

「自由意思による、事前の、十分な情報に基づく同意」（FPIC）を、TEK を所有する先住民コミュニティから得るために、コミュニティ、SaBC および他の関係組織との間で遺伝資源・TEK の調査・利用に係るプロトコルを準備し、その過程で ABS にかかる法的権利に関するコミュニティの意識啓発も図る。

ABS は、サバ州やマレーシアにおける政府部門・民間部門にただちに便益をもたらすものではない。法制度の改正にかかる時間や先住民コミュニティから FPIC を得るために見込まれるプロセスから、実現までには他の諸提案よりさらに長い期間がかかる可能性がある。

5.10 提案 10 : CRBR 内の採石場

サバ公園局は CRBR の境界（移行地域の外周）を設定する際に、現地踏査を行い、既存の採石場を確認した場合には、CRBR からその地域を除外した。しかし、CRBR の移行地域は、岩石の埋蔵量が豊富であるため、将来 CRBR 内に新たな採石場が建設される可能性もある。一般的に、採石業では工程上淡水利用の必要があり、上流域による水供給サービスが非常に重要となる。したがって、同サービスによる採石事業者による支払いも検討しうる。

採石場はまた、一般的に生物多様性に対し負の影響を持ちうる。CRBR 内での生物多様性ノーネットロス⁹を達成するために、生物多様性オフセットの導入も検討しうる⁹。

⁹ 採石業者には環境保全に協力的なものもある。2010 年、サバ州における主要な建設業者の一つであり、多くの採石場を所有するハブ・セン建設資材会社は、30 ヶ月に及ぶ森林局との協働プロジェクトを実施した。同事業の目的は（1）森林リハビリテーションと保護工事、森林管理活動や植樹のための現場作業員を募集し、（2）劣化した土地や森林の少なくとも 40 ヘクタールを復元することによって、自主的な努力による実験的な「ノーネットロス」を実施することであった(Sabah Forestry Department, 2014)。

第6章 州レベルの PES 政策策定への提案

3.2 節に記した通り、UNDP 支援による「マレーシア・サバ州の森林の多様な利用における生物多様性保全」（2012 年～2018 年）では、サブコントラクトによる州レベルの PES の政策・規則の新規策定と PES のパイロット事業の実施が計画されている。以下には、前章までのマレーシアおよびサバ州における自然環境保全のための経済手法導入の現状分析、CRBR 管理における経済手法導入の検討に基づく、州レベルの PES 政策策定に対する提案を示す。

6.1 政策提案 1：州の水源・集水域管理における PES 導入

州レベルの PES 政策は、州の水源・集水域管理との相乗効果を図って策定すべきである。5.1 節に提案した CRBR の集水域サービスへの PES 導入とババゴンドム集水域におけるそのパイロット事業は、CRBR の流域管理のみならず、州全体の集水域管理の方策の 1 モデルとして検討しうる。

ここでサバ州におけるこれまでの集水域管理のとりくみを概観する。1994 年に水源管理マスタープランが策定され、そこで水源管理のための集水域管理の必要性が示された。また、同マスタープランに基づき、サバ州の集水域管理は DID の管轄下にある。1998 年に策定された水資源条例は、集水域管理をはじめ水源管理についてのさまざまな権限と責任を定めている。集水域を管理することは、すなわち集水域内の人間活動を管理することであり、集水域へのアクセスについての決定とモニタリング、法が遵守されない場合の強制執行によりなされる。それらを、個別の集水域の管理計画により促進するため、1999 年にはモヨグ川流域の統合的集水域管理パイロット計画が策定され、2002 年には DANIDA が統合的集水域管理に係る能力向上プロジェクトを実施した。そこから得られた経験に基づき、DID はコタマルドゥとキナバタンガンといった他の流域管理計画も策定した。2005 年には、水資源条例が定める水資源局長として、DID 局長が公式に指名された。また、2006 年 2 月には、同条例に基づき州主席大臣が議長を務める水資源評議会が設立された。

以上の集水域管理の取り組みから、多くの課題も明らかになってきた。その一つは集水域住民の社会経済に関わるものである。これまで策定された集水域管理計画には、集水域住民による決定を必要とする対策も含まれていた。集水域の水源保護地域、水源保全地域としての指定（官報掲載）である。このような対策の実施には財政面、政治面、社会経済面の課題がある。水源保護地域の官報掲載には、すでに対象地が割譲され私有地となっている場合、代価を支払っての土地収用が必要となる。また、水源保全地域としての官報掲載でも、集水域管理のため既存の土地利用の改変が必要となる。そのような土地利用の改変は地域住民の生計や収入に影響を与え、政府による補償が必要となるかもしれない。このような課題もあり、前述の通り、DID は州全域の水源保護地域・水源保全地域を計画・図化しながらも、いまだ 1 箇所として公式登録（官報掲載）されていない。

集水域からの給水サービスに対する PES の導入は、上記の課題に応えるもので、集水域の官報掲載を促進することが期待される。5.1.2 節に示したババゴンドム集水域でのパイロット事業では、水道料金への課徴金などによる集水域土地所有者・住民への支払いの仕組みが確立され、それを経済インセンティブとして水源保護地域・水源保全地域の官報掲載に対する土地所有者・住民の合意が得られることが期待される。同パイロットプロジェクトが成功すれば、これをモデルとして州内の他の集水域にも PES と水源保護地域・水源保全地域登録を合わせた集水域管理を普及することが検討できる。

6.2 政策提案 2：貧困撲滅・農村開発における PES への配慮

州レベルの PES 政策の策定においては、連邦政府・州政府が採用する貧困撲滅・農村開発に係る政策とその実施を外部要因とは見なさず、貧困データベース（eKasih）や郡レベルで実施される貧困撲滅スキームを活用した PES 導入を検討することが望ましい。また、生態系サービスに対する負の影響が懸念される貧困撲滅・農村開発スキームについては、EIA などの既存の規制的手法に加えて、その対象地域や実施計画について PES の導入も考慮に入れた調整・介入を図ることを検討すべきである。

具体的には、国際的に登録された保護区（キナバル山世界自然遺産、CRBR、Lower Kinabatangan Segama Wetlands ラムサール湿地）およびその候補地、そして国内法による保護区など、生態学的価値が高く重要な生態系サービスを提供する地域周辺では、対象地域が提供する生態系サービスを適切に評価した上で、生態系サービスに負の影響が懸念される貧困撲滅事業の実施を控え、PES も含めた地域住民に対する代替的な生計向上策を検討すべきである。

このような方針を実現するため組織体制として、貧困撲滅にかかる意思決定を行う既存の各種貧困撲滅委員会（州レベル、郡レベルで組織横断的に編成）に、生態系サービスの維持・向上と PES の検討に責任を負う NRO をはじめとする自然環境保全担当機関が参加することが望ましい。

翻って、PES の政策策定と実施を行う組織体制においても、NRO をはじめとする自然環境保全関係機関のみならず、州経済計画局（Economic Planning Unit/EPU）、農村開発省、SEDIA など貧困撲滅・農村開発関係機関が参加することが望ましい。

6.3 政策提案 3：再生可能電力固定価格買い取り制度（FiT）の活用

州レベルの PES 政策として、再生可能エネルギー源による電力の固定価格買い取り制度（FiT）の活用を検討しうる。5.5 節に、FiT を活用して、CRBR 内の水系による小規模水力発電からの電力を販売し、集水域保全への支払いを行う PES メカニズムを提案した。その計画と実施には更なる検討が必要であるが、この提案は CRBR 内に限らず、州内のその他の集水域保全でも検討しうる。

また、FiT はアブラヤシ農園による河川汚染の抑制に向けた経済インセンティブも提供しうる。アブラヤシ産業ではパーム油（palm oil）とパーム核油（palm kernel oil）を生産するが、これらの油を採った後に多くの廃棄物が出る。空果房（Empty Fruit Bunch/EFB）、パーム核油残渣のパーム核粕（Palm Kernel Cake/PKC）、その他にも伐採後の枝葉、パーム廃液（Palm Oil Mill Effluent/POME）などが廃棄物として排出される。特にパーム廃液は、適切に処理されずに排出され、河川の汚染の原因となることもあった。更に、アブラヤシの木はおよそ 25 年間隔で植え替えられるが、その際には伐採されたパーム古木が大量に発生する。

かつて、これらは廃棄物として処理され環境中に排出されてきた。しかし、上記の通り、マレーシアで新たに導入された FiT での買い取り対象となる再生可能エネルギー源には、バイオマスも含まれる。パーム油産業の廃棄物に含まれるバイオマスを再利用した発電には、アブラヤシ農園・搾油工場における電力自給に加えて、現在は FiT による買い取りという経済インセンティブも働く。そして、これまでのパーム廃液による河川の汚染をはじめ、アブラヤシ産業からの副産物の自然環境への廃棄を抑制するという点でも、FiT は生態系サービスの維持・向上に貢献しうる。

6.4 政策提案 4：その他

上記に加えて、5.4 節で提案した外国人のサバ州からの出国時の自然保護料の徴収、および州内全域か特定地域のホテル・宿泊施設での一律の自然保護料の徴収による保護区管理への支払いは、州レベルの PES 政策として検討しうる。また、5.6 節に提案した CRBR PES 基金は、その徴収・支払いの対象を CRBR の生態系サービスに限定する必要はなく、生物多様性センター基金等を活用した州全体の PES のための基金の設立も検討しうる。

森林局が主導する REDD+への取り組みは、資金などの経済的なインセンティブを付与することにより二酸化炭素排出削減を行うものであり、国際レベルにおける PES の一例とも捉えられる。森林局が導入ないし計画してきたその他の革新的資金調達メカニズム（森林認証、バイオバンク、生物多様性オフセット）とも合わせて、州レベルの PES 政策の策定において、これらの取り組みの更なる展開・普及・制度化を検討しうる。

5.9 節に、CRBR を今後改訂されるサバ州生物多様性条例および ABS 実施細則の施行のパイロットサイトとすることを提案したが、法制度の改正や地域住民との合意形成に見込まれるプロセスから、実現までには他の諸提案よりさらに長い期間がかかる可能性がある。州レベルの PES 政策の一部として、ABS の組織・制度づくりに取り組むことも検討しうる。

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添付資料 1
面談取材記録 (25 政府機関・組織) および **Tudan** 村現地調
査記録

Record of interview with the Tambunan District Officer

- (1) Date and time: 14:30-16:00, 2 Dec. 2014
- (2) Interviewee
 - Mr. Thomas Logijin, District Officer, Tambunan (Tel. +60 13 868 6788)
- (3) Venue
 - Tambunan District Office
- (4) Questions: -
 - Update of the socioeconomic and poverty status in Tambunan (since the planning of CRBR management in 2011 under BBEC II)
 - Comments on introduction of Payment for Ecosystem Services (PES) to CRBR
- (5) Facts and comments
 - As an official figure after confirmation in the census in 2010, population in Tambunan is 36,297. After 4 years with 1.5% annual growth of the population, it would be 40,000 at present. Populations of men and women are not different much.
 - Several agencies could be service providers in PES of CRBR, Sabah Parks for services of Crocker Range Park (Core Area), Forestry Department for the Forest Reserves (Core Area), and Lands and Surveys Dept. for the Buffer Zone and Transition Area.
 - The water in the rivers in a half of the area of Tambunan, the right bank of Pagalan river is fed by CRP. 4years ago water of the river was clear but nowadays it is getting dirtier.
 - In the titled land, according to the law, they can develop as they like. To avoid the lengthy EIA process stipulated in the state enactment, landowners tend to declare less than 100ha for development. Even for MESEJ, the poverty alleviation projects implemented by District Offices under KPLB, they propose each project in the land less than 100ha for the purpose.
 - Flooding is common, but floodwater recedes quickly. A lot of opening of forest titled land may have affected that.
 - People want to plant oil palm and rubber.
 - Areas of rubber and oil palm plantation has been growing, while the area of wet paddy is stable from the figures in the table below.

Planted Area of Main Crops in Tambunan District in 2007

District	Wet Paddy	Dry Paddy	Rubber	Cocoa	Coconut	Oil Palm
	hectare					
Tambunan	1,827	-	1,220	153	5	45
Ratio in the total area of the district	1.4%	-	0.9%	0.0%	0.0%	0.0%

Source: Department of Statics Malaysia, Sabah (2009)

- In Tambunan, most farmers produce wet paddy rice for their own consumption. According to the Tambunan District Office in 2011, production of rice was more than their self consumption (205% of the demand), but they didn't sell the surplus in the market as it is considered as taboo, then the surplus rice had been kept there for many year. It seems economically wasting, but they follow the custom. The old generation still keeps this custom, but the new generation changes. They are selling 7% of (6% in wet, 1% in dry) of rice produced in Tambunan.
- Ginger production emerging in 2011 has been decreased because of crop disease (bacterial wilt/ *layu bakteria*), for which there is no cure. Thus we are introducing fertigation for ginger treating water. It is still in trial and it is costing. The trial is supported by the state agriculture dept.
- Concerning the water supply as ecosystem service from Crocker Range, according to Water catchment enactment, the government has a power to charge for usage of water irrigated from Water Protected Areas. However, the clause has not been enforced, as any of the proposed Water Protection

Areas under the enactment have not been gazetted. The paddy farmers in Tambunan have never paid for irrigation as well.

- The socio-economic status in the part of CRBR in Tambunan which JICA found in 2011 has not changed much.
- People like to declare themselves as poor households to get many kinds of government assistance. Being registered under e-kasih, they can get allowance provided by the welfare department, a house, and support on livelihood. In Tambunan, we have spent much for the poor households, but their attitude doesn't change. They would like to keep taking services from the government by being poor.
- In 2011, Tambunan District Office was introducing a method of rubber planting with less adverse environmental impact (no use of machinery for earthmoving), which is called "peringan." We have applied the method in a village. However, it was considered as irrelevant, as it requires labor input from villagers. On the other hand, assisting scheme for rubber and oil palm plantation by the federal agencies such as RISDA (Rubber Industry Smallholders Development Authority) and MPOB (Malaysia Palm Oil Board) provide free service for the villagers including preparation for planting. Villagers have no incentive to apply for the peringan in comparison to such free services.
- In 2011, under the assistance by Sabah Fisheries department, 76 Tagal committees existed in Tambunan District. All major rivers in Tambunan (Pegalan/tendulu/some rivers in Trus Madi FMU) were covered by Tagal system.
- Fisheries Department is now constructing a "Fresh Water Biodiversity Centre" in Mahua just beside of the substation of Crocker Range Park near Mahua Waterfall. Sabah Parks is aware of the plan. It is a breeding centre for fresh water fish for aquaculture, such as tilapia, catfish, *ikan perian*, etc.
- Our MESEJ projects are not called as an "agropolitan" projects, as its size is small, only less than 100ha. We call far larger projects as agropolitan projects, such as the project in Tongod by SLDB with 1,000 acres and the rubber plantation in Bangi and Pitas by LIGS.
- To the projects under PKS, PPES, PPP and 1AZAM which JICA found in 2011, we don't have much addition. Recently we have 1Azam involving 100 person, done by Ministry of Food and Agricultural Industry, Sabah. We just provided e-kasih data about poor household. This year, we didn't issue any new PPP and PPES, as they haven't been sustainable. We assisted shiitake and ginger production under the scheme. Ginger production was good but there was no continuation after the assistance completed. Though they can make benefit even after the assistance, but they don't continue, as they prefer easier production with financial assistance. It might be caused by their economical consideration and also their attitude. They just accept poverty and wait for support from the government. We spent much for infrastructure especially for shiitake hut (RM10,000) but it is not in use. Then we stopped new project under PPP and PPES.
- I am not aware of the two villages in Tambunan, which were recently selected as new pilot sites for CRBR.

(6) Reference collected (as attached): -

- Land Use in Tambunan
- Poverty income line set by Malaysian government in 2012

2014/12/31 (at night)

from Thomas bogijim
DO Tambunan

6.0 PENGGUNAAN TANAH

6.1 Status tanah

- 6.1.1 Town Lease (ha) : 13,608 ha
- 6.1.2 Country Lease (ha) : 1,548.101 ha
- 6.1.3 Provisional Lease (ha) : 192.718 ha
- 6.1.4 Native title (ha) : 14,517.218 ha
- 6.1.5 Field register (ha): 2,356.156 ha
- 6.1.6 T.O. L. (ha): Tiada Maklumat
- 6.1.7 Luas Tanaman Kelapa Sawit : 1,417.33 ha (3,502.22 ekar)
- 6.1.8 Luas Tanaman Getah : 1,140.94 ha (2,819.34 ekar)

Temporary occupation license (or logging usually)
6.1 Tanah "alienated/ gazetted"

- 6.1.1 Tanah Negeri (ha) : 135.30 ha
- 6.1.2 Tanah Persekutuan (ha) : Tiada Maklumat
- 6.1.3 Lembaga Tabung Getah (ha) : Tiada Maklumat
- 6.1.4 Borneo Semudra (ha): Tiada Maklumat
- 6.1.5 Jabatan Perikanan (ha) : Tiada Maklumat
- 6.1.6 KPD (ha): Tiada Maklumat
- 6.1.7 SAFODA (ha): Tiada Maklumat
- 6.1.8 Jabatan Pertanian (ha) : Tiada Maklumat
- 6.1.9 Jabatan Perkhidmatan Haiwan dan Perusahaan Ternak (ha): 499 ha
- 6.1.10 Hak milik Jabatan / agensi Kerajaan lain (senaraikan) : Tiada Maklumat
- 6.1.11 Tanah perindustrian (ha) : Tiada Maklumat
- 6.1.12 Jumlah keluasan tanah pertanian (ha): Tiada Maklumat
- 6.1.13 Jumlah keluasan tanah perikanan (ha): Tiada Maklumat
- 6.1.14 Jumlah keluasan tanah perumahan (ha): Tiada Maklumat
- 6.1.15 Hutan Simpan Negeri (ha) : 27,812 ha
- 6.1.16 Taman Negara (ha) : 14,335 ha

From Thomas Loggjin
D.O. Tambunan

4 Dec.
2014

PENDAPATAN GARIS KEMISKINAN (PGK) TAHUN 2012



Wilayah	Miskin		Miskin Tegar	
	Isi Rumah	Per kapita	Isi Rumah	Per kapita
Sem. Malaysia	830	210	520	130
Bandar	840	220	510	130
Luar Bandar	790	190	530	120
Sabah & Labuan	1,090	240	660	140
Bandar	1,080	240	630	140
Luar Bandar	1,120	240	710	150
Sarawak	920	230	600	140
Bandar	960	230	630	150
Luar Bandar	870	220	570	140

Sumber : Unit Perancang Ekonomi (EPU), Jabatan Perdana Menteri



Record of interview with the Rural Development Corporation (*Korporasi Pembangunan Desa/KPD*)

- (1) Date and time: 8:30-10:00, 3 Dec. 2014
- (2) Interviewees: -
 - Datuk (Datu) Basrun Hj. Datu Mansor, General Manager/ CEO, KPD
 - Ms. Jamilah Lee Nyuk Choon, Group Manager (Agriculture), KPD
 - Mr. Awang Sallih Awang Labai, Planning and Development Manager, KPD
- (3) Venue: Head office, KPD
- (4) Questions: -
 - Update of their assistance in rural development in CRBR (since the planning of CRBR management in 2011 under BBEC II)
 - Comments on introduction of Payment for Ecosystem Services (PES) to CRBR
- (5) Facts and comments
 - The list of scheme of KPD for rural development in CRBR (beekieeping, vanilla, pomelo, mashroom and homestay) which JICA prepared in 2011 is still valid.
 - KPD has its training centre in Tenom. It used to be in Kneingau but we moved it in 1980s.
 - The mushroom project in Tambunan in 2011 was shifted to Moyog (Penampang), Kudasan (Ranau) and Kimanis (Papar).
 - In 2004, Ministry of Agriculture and Food Industry, as a result of JICA's assistance for the study on Development for Enhancing Rural Women Entrepreneurs in Sabah (PUANDESA) prepared a master plan for development for rural women entrepreneurs. The master plan was approved by the state government. The coordinator for implementation of the master plan is Ministry of Agriculture and Food Industry. KPD is one of the many implementers. The plan cannot be implemented without funding. Various government agencies have different priorities.
 - KPD is now promoting fertigation method of ginger in Tambunan, Keningau and Tenom in collaboration with MARDI. Local farmers grow usually ginger on shifting cultivation and it degrade farmland much and they can only grow ginger in a same place for 2-3 harvesting cycles. In the pilot project in Tambunan, the target ginger farmers used to shift their farmlands then their last farmland is far away from their house and they needed to stay overnight in the farm. By introduction of the fertigation method, they are now growing ginger in their backyard.
 - Ginger and rice are harvested on hill. We understand that uphill farming degrade water supply and water regulation services in downstream. If the environmental authorities give us budget, then we can shift the farmers from hill. However, we are an agency in charge of poverty alleviation rather than nature conservation. We can contribute to development and introduction of farming methods maintaining ecosystem services, in the training centre in Kundasan, and through the fatigation method for ginger.
 - KPD does not conduct any agropolitan scheme. KPLB does. They apply MESEJ scheme on the hillside next to Crocker Range Park in Ulu Kimanis, Papar. KPD is assisting farmers without moving them (in-situ rural development).
 - OISCA Sabah Charter is NGO, a separate entity from KPD. It is not a part of KPD. KPD is assisting OISCA.
 - Concerning water supply service of uphill, KPD used to be in charge of irrigation and water supply in Kudasan, Ranau. It was exceptional arrangement as water supply and irrigation were under Water Department and DID except Kundasan. As we found this task is too big for KPD later, Water Department took over the task in 2012 even in Kundasan.
 - For payment of water supply service, additional payment on water bill could be considered. However, the reason of the raise of bill must be transparent and accountable for the users.

Record of interview with Sabah Parks (in charge of Kinabalu Eco-Linc)

- (1) Date and time: 11:00-12:00, 3 Dec. 2014
- (2) Interviewees: -
 - Mr. Maipol Spait, Terrestrial Park Manager, Sabah Parks
 - Mr. Andy Martin, Field Officer for Kinabalu Eco-Linc Project
- (3) Venue: the Hall, Kinabalu Park Headquarters
- (4) Questions: -
 - Update of information of Kinabalu Eco-Linc Project in relation to introduction of PES to CRBR (since the planning of CRBR management in 2011 under BBEC II)
 - Comments on introduction of Payment for Ecosystem Services (PES) to CRBR
- (5) Facts and comments
 - Eco-Link is now implemented as one of the three pilot projects under the EU REDD+ Project (Tackling Climate Change through Sustainable Forest Management and Community Development) which is lead by Sabah Forestry Department.
 - Feasibility study of Eco-Link project was conducted by ERA Consulting Firm from 2010 to 2011, funded SEDIA. The idea to connect between Kinabalu Park and Crocker Range Park by wildlife corridor is originated in BBEC Phase 1 (probably in the Crocker Range Park Management Plan). The idea is also originated in Heart of Borneo which is promoting connectivity of wildlife throughout Borneo island.
 - In the plan of Eco-Link in 2011, there was no clear indication to contribute to REDD+ or carbon sequestration. However, the plan was proposed through Sabah Forestry Department to EU to apply for financial assistance under REDD+.
 - EU is financing 75% of the project cost while Sabah Parks bares the remaining 25%.
 - In 2013, Mr. Maipol attended a workshop on PES organized in Philippine by ASEAN Centre for Biodiversity (ACB). Mr. Maipol presented a proposal of PES for water supply service from CRP at the workshop. In the proposal, water volume of the 8 main rivers from CRP was estimated. He estimated value of the water RM700/day by multiplying a certain rate of value to the total volume.
 - Sabah Park Enactment stipulate that Sabah Parks can collect fee from users of the park.
 - For the three pilot projects under EU REDD+ Project including Eco-Linc, we introduce Monitoring, Reporting and Verification (MRV). A MRV expert is assigned in Sabah Forestry Department as a requirement from EU.
 - Sabah Parks signed MOU with the board of trustees of one Community Conserved Area (CCA) in Bundu Tuhan at the workshop organized yesterday. It is one of the 9 CCAs planned under Eco-Linc Project. In the project period of four years (2014-2017), we will sign MOUs for all the 9 CCAs. IN this December, we will sign a MOU for CCA in Kiau.

Record of interview with the Institute for Tropical Biology and Conservation (ITBC), Universiti Malaysia Sabah

- (1) Date and time: 9:00-10:00, 4 Dec. 2014
- (2) Interviewee: -
 - Prof. Charles Vairappa, Director, Institute for Tropical Biology and Conservation, Universiti Malaysia Sabah (ITBC)
- (3) Venue: the office of director, ITBC
- (4) Questions: -
 - What is ITBC's role in environmental education and other contribution for PES in CRBR
- (5) Facts and comments
 - In SDBEC, ITBC would like to focus on environmental education, while in the preceding programmes assisted by JICA, in BBEC Phase 1, ITBC was focusing on technical capacity building including establishment of BORNEENSIS reference collection centre and in BBEC Phase 2 we worked for the policy issues and the third country training programme (TCTP). Then environmental education is our focus in SDBEC.
 - As a part of the CRBR management, Mr. Arman and Ms. Sahana from ITBC have worked for River Environmental Education Programme (REEP).
 - In the environmental education contributed to newly established PES mechanisms for the CRBR river basin management, ITBC can be in charge of its technical aspect while Sabah Parks may play a role of a coordinator.
 - Faculty of Business, Economic and Accounting or its researcher, such as Dr. James Alin may contribute to design a mechanism for PES in CRBR.

Record of interview with Sabah Wildlife Department

- (1) Date and time: 11:30-13:00, 4 Dec. 2014
- (2) Interviewee: -
 - Mr. Augustine Tuuga, Deputy Director I, Sabah Wildlife Department (SWD)
- (3) Venue: Institute for Tropical Biology and Conservation, Universiti Malaysia Sabah
- (4) Questions: -
 - On-going and/or planned activities implemented by Sabah Wildlife Department for PES and other economic incentives for wildlife conservation
- (5) Facts and comments
 - So far, SWD is charging entrance fee for Lankayan island and Lower Kinabatangan Wildlife Sanctuary (RM2/person), Lankayan island and Gomantong cave. We utilize the fee for conservation of the protected areas.
 - We also charge entrance fee at Sepilok Orangutan Rehabilitation Centre (SORC). We are managing the facilities SORC only, while Kebil-Sepilok Forest Reserve surrounding the Centre is under management of Sabah Forestry Department.
 - Lankayan island is one of the three islands located in Sugud Islands Marine Conservation Area (46,000ha) under Sabah Wildlife Conservation Enactment. The area is managed by a private and non-profit organization, REEF Guardian. They use entrance fee for research and conservation of turtles. Tourism attraction in the island is snorkeling and scuba diving. Their activity includes sea turtle monitoring.
 - Lower Segama Wildlife Conservation Area (LKS), the protected area established through BBEC has remoteness as a bottleneck for tourism development.
 - I cannot confirm if the riparian reserve along (within) LKS has been declared in gazette. However, recently even some parts of riparian areas along Kinabatangan river in oil palm plantations were declared as riparian reserves. The riparian reserve in LKS discussed earlier must have been declared.
 - We have a visitor centre in LKS and two permanent staff members are posted. Mr. Tsubouchi brought some Japanese tourists to the centres.
 - I am from Kinarut area. One company owned by my cousin tried to log his titled land. The forest is in a water catchment of a village downstream, Kg. Tampasak, Kinarut, Papar. I was a member of JKKK (Village Security and Development Committee), we requested not to log the area. A forest officer in charge told us as it is titled land, it is legally up to the land owner to log the forest. Anyway logging didn't happen, and the water resource was utilized for gravity water supply to the village. Applying PES concept, the villagers downstream as users should pay for maintenance and conservation of the forest upstream. However, they don't have much cash income and they cannot afford to pay.
 - In Tomani, Tenom, they own forest in a good condition, they want to conserve the forest for water supply and it is under their native communal title.
 - Concerning the EU REDD+ Project, Lower Kinabatangan Wildlife Sanctuary was selected as one of the three pilot projects. At first, SFD conducted a workshop for introduction of the EU REDD+ project. In the workshop, we discussed pilot project sites, then we determined them.
 - Initially I was in charge of the EU REDD+ Project from SWD. Since I was very busy, then Mr. Peter Malim took over the role.
 - REDD+ , we will retain forest as much as possible, and hopefully have reforestation project in some parts of the area. We are still in the process of mapping, in terms of carbon stock.
 - We work together with people for alternative use of the land rather than development of oil palm in a few projects between Batu Puti and Deramakot such as Bukit Garam, Lamag, etc.. We conduct capacity building of the people there specifically that for ecotourism.

- Mr. Raymond Alfred, executive secretary for BCT, is also Project Coordinator for EU REDD+ Project. He is mapping the forest in terms of carbon stock.
- Kulamba, as well as Tabin Wildlife reserve were declared under forest enactment but managed by SWD according to the cabinet decision. The Kulamba Wildlife Reserve management plan prepared by SWD with input from Dr. Junaidi Payne is not around. It should be in SWD.
- Concerning ABS, we haven't done much on documentation and conservation of Traditional Ecological Knowledge. The Economic Valuation of Wildlife in Sabah including study of hunting was conducted by PACOS under the DANCED Project.
- Throughout Southeast Asia, at present people don't realize the value of ecosystem services and necessity of payment for the ecosystems services. We just need to learn from the good practices in other countries to raise awareness. Amount they prepare to pay relies on economic condition of the people. People who own the land would not be satisfied with the amount the users can pay.

Record of interview with Lands and Surveys Department

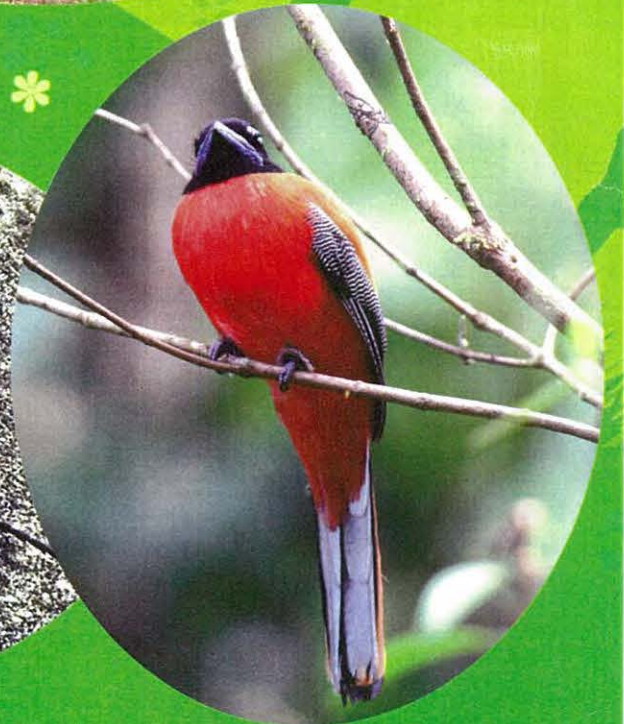
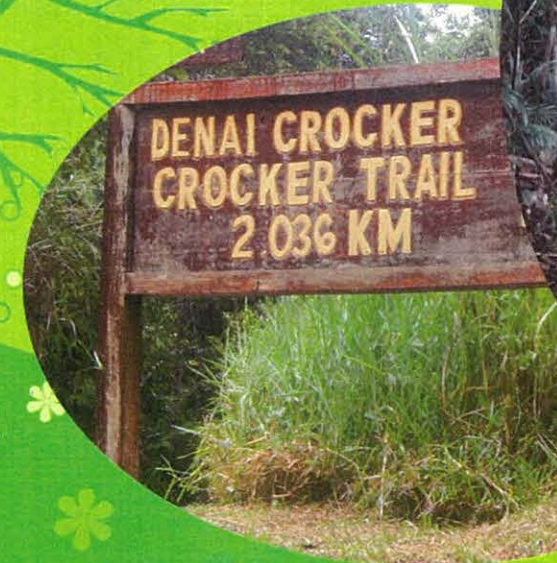
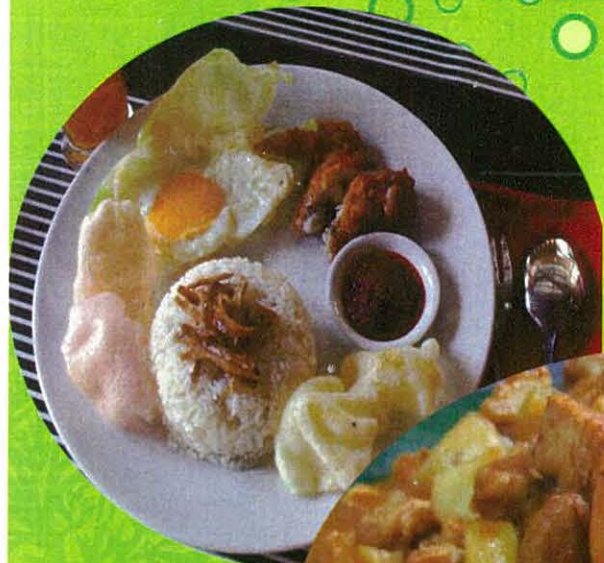
- (1) Date and time: 9:00-10:30, 5 Dec. 2014
- (2) Interviewee: -
 - Mr. Brnard Liew, Principal Assistant Director, Lands and Surveys Department (LSD)
- (3) Venue: Mr. Liew's office, LSD Headquarters
- (4) Questions: -
 - Restrictions and opportunities in the enforcement of land related laws for institutional design of PES
- (5) Facts and comments
 - So called "communal title" means Communal Native Title, one of the types of native title. It is stipulated in Section 73 of Land Ordinance.
 - Most of the households in the villages in CRBR including the poor households registered in e-Kasih usually own land and right to use the land, though they don't generate income from them.
 - Being stipulated in Section 65-69, Land ordinance: They have customary tenure, and right to use the land, so-called natives continuous occupation..
 - Lower Segama Wildlife Conservation Area was declared in the gazette in 2012.
 - Land can be alienated. However, even in alienated land, water still belongs to the state government, they cannot block water ways.
 - The original purpose of riparian reserve is to provide access to rivers, but it is effective for protection of ecosystem. The guideline of the width and riparian reserves was applied when we survey boundary of riparian reserves for alienation.
 - During alienation process we marked up the riparian reserves in the area. We confirmed them. In alienation the riparian reserves were not gazetted, but the boundary to the riparian reserves are only shown in the title.
 - Along Kinabatangan river, for non alienated land, we recently survey and gazette certain part of riparian reserve.
 - What SFD recently did for riparian reserves is to cut down oil palms in riparian reserve. Such planting in riparian reserve is illegal. Such enforcement of law is nothing to be appreciated as "voluntary environmental contribution."
 - Concerning riparian reserves, since 1930 we have stipulation of riparian reserve in Land Ordinance, but detailed regulations on size of the reserves were not in the ordinance. For 70 years we applied our own way and marked up riparian reserve boundary. Before year 2000, we marked up riparian reserves following a guideline "as long as the river is navigable." We also had a kind of guideline stipulated by DID or the Public Works Dept. Before 2000, small rivers (less than 3m width) did not have riparian reserve, and along the big river during alienation LSD marked up at least 20m of riparian reserve to make the river navigable.
 - According to Water Resources Enactment, in Water Conservation Area alienation of land is allowed with restrictions, while Water Protection Area cannot be alienated (Section 34 and 36).
 - We can declare Water Conservation Area which includes titled lands, but DID has faced difficulties to convince land owners to accept such declaration. Maybe PES can work in Water Conservation Area. The landowners can be service providers. They cannot control a river which is under control of the state, while they can control use of the land they own in the catchment area.
 - Concerning REDD+, carbon inside the forest reserve and protected area is not an issue. Carbon outside of them is.
 - The two new pilot villages for CRBR after Tudang are Kg. Sintuong Tuong and Kg. Kiporing, Tambunan District. Though District Officer, Tambunan would not be aware of selection of the two villages, Assistant District Officer (ADO) must know. one of the two ADOs. We have maps of their land titles near the villages, they are scattered in between state land. Our GIS provides detailed information of each titled land, but no detailed information for land application.

- Lands and Surveys Dept. can provide information including GIS data of land titles in CRBR to you as long as being requested by Sabah Parks or NRO. Viewing of the GIS data of the titled land (boundary and title number, etc.) in whole Sabah state is possible by referring with the published GIS database (JTUWMA) with ArcGIS.
- LSD has 8 divisional offices. Every day each office updates the part of GIS they are in charge. Every 2 weeks the data in the whole state are synchronized.
- If you have the free mobile application of ArcGIS on your smartphone with GPS. You can just refer to JTUWMA to know status of the land where you are. The PC version of ArcGIS (including the free web-based software) can also view the database.
- Such GIS data of titled land is only available in Sabah in Malaysia. We have published the database using cloud technology since two years ago. The database was close to get the award of IT in Malaysia.

Record of interview with Sabah Tourism Board

- (1) Date and time: 10:30-11:30, 5 Dec. 2014
- (2) Interviewees: -
 - Mr. Humphrey Ginibun, Marketing Manager, Sabah Tourism Board
 - Ms. Halimah Haji Hassan, manager, Tourism Product Division
- (3) Venue: The office of Sabah Tourism Board
- (4) Questions: -
 - Status of tourism in CRBR, and practices of PES through tourism in Sabah
- (5) Facts and comments
 - Concerning practices of collection of conservation fee from operators and visitors, Kinabatangan Tour Operator Association levy their members for conservation, but they don't force tour operators to join them. It is voluntary basis. KITA was initiated by WWF with some lodge operators for nature conservation. The members of Kita includes Mr. Cede Prudente and Mr. Alex Yee, the owner of Rumah Terbalik also.
 - There is Orangutan Educational Centre in Rasa Ria Resort Hotel which is managed and owned by Sabah Wildlife Department. The hotel maintains the Centre.
 - Reef Guardian, an NGO and Dr. Sen, Sabah Wildlife Department manages Sugud Island Marine Conservation Area and entrance fee is collected.
 - It seems Sabah Environmental Trust (SET) headed by Dr. Rahimatsah Amat, former Chief Technical Officer for WWF in Sabah is doing something for PES.
 - Charging exit fees would be an option for PES. In Indonesia, they set different exit fees according to departure points, such as Rp.150,000 from Jakarta, Rp. 200,000 from Bali, Rp. 75,000 from Bandon, etc. The collected fees are used for certain purposes.
 - In Melaka, the state government charges "heritage fee" on guests/rooms of all hotels in the state. The rate is 5%. The fee is used for maintenance of the World Heritage.
 - Boneo Ecotours managed by Mr. Albert Teo, the private company operating Sukau Rainforest Lodge, contribute to tree planting. Nestle also funded for tree planting in Kinabatangan area.
 - Feasibility of PES through tourism depends on a market segment targeted as service users. The Japanese tourism market is positive about payment for and contribution to conservation effort, such as adapting trees, coral planting, etc.
 - In Ulu Kimanis near Crocker Range Park, there is a hotel named Manis Manis "Rooftop of Borneo" Resort promoting nature tourism.
- (6) Reference collected (as attached): -
 - Advertisement of a private nature resort in CRBR
 - *Sabah Tourism Quick Facts (updated as at 9.9.2014)*

Manis Manis "Rooftop of Borneo" Resort, Crocker Range Park Your New Eco Nature Destination



For more Info: Please Contact



088 719 900 (Sales Office)

+6 019 809 8683 (Resort Mobile)



info@manismanisresort.com

From STB STRB 5 Dec. 2014



Vision

To achieve a minimum 10% of the total national receipts by the year 2020.

Mission

To market position SABAH, Malaysian Borneo as the premier nature adventure destination in the world.

SABAH TOURISM

Quick Facts

Updated as at 09.09.2014

SABAH TARGET ARRIVALS 2014

Domestic Visitors 2.36 mil

International Visitors 1.16 mil

Total Arrivals 3.52 mil

Tourism Receipts RM 6.988 bil (e)

SABAH VISITOR ARRIVALS 2013

Domestic Visitors 2,293,923

International Visitors 1,089,320

Total Arrivals 3,383,243

Tourism Receipts RM 6.684 bil

While every care has been taken in compiling the data in this Quick Facts, Sabah Tourism cannot be held responsible for any inaccuracy, omission or alteration that may occur. The co-operation and assistance of all parties concerned in providing data for this Quick Facts are gratefully acknowledged.

All Information is correct at the time of printing:
09.09.2014

Research Division, Sabah Tourism Board,
Ministry of Tourism, Culture and Environment

2013 Sabah Hotel Room Supply

Star Rating	Hotel No.	Room No.
5 Star	9	3,041
4 Star	14	3,080
3 Star	46	4,380
2 Star	40	2,452
1 Star	38	1,344
3 Orchid	34	1,004
2 Orchid	33	859
1 Orchid	25	484
No Rating	343	7,912
Total / Overall	582	24,556

* 2013 Sabah Hotel Average Occ. Rate = 62.2%

Source : Respectives Hotels / * Based on Tourism Malaysia

Note : 1. Information extracted from Hotel Inventory Survey 2013.

Summary Of Direct Scheduled Flight Frequency & Seat Capacity

From	To	Airlines	Weekly		Days of Service		
			Flight	Seat	Arrival	Departure	
DOMESTIC FLIGHTS							
Kuala Lumpur	BKI	MH	72	11,520	Daily	Daily	
	BKI	AK	77	13,860	Daily	Daily	
	BKI	OD	14	2,520	Daily	Daily	
	TWU	AK	28	5,040	Daily	Daily	
	TWU	MH	14	2,016	Daily	Daily	
	SDK	MH	7	1,260	Daily	Daily	
	SDK	AK	18	3,240	Daily	Daily	
Penang	BKI	AK	11	1,980	Daily	Daily	
Johore Bahru	BKI	AK	21	3,780	Daily	Daily	
	TWU	AK	4	720	1,3,5,7	1,3,5,7	
Kota Bharu	BKI	AK	3	540	Daily	Daily	
Labuan	BKI	MH	7	1,260	Daily	Daily	
	BKI	MASWings	35	2,380	Daily	Daily	
Sarawak	Kuching	BKI	MH	9	1,440	Daily	Daily
		AK	21	3,780	Daily	Daily	
Bintulu	BKI	MASWings	14	952	Daily	Daily	
Sibu	BKI	MASWings	14	952	Daily	Daily	
Miri	BKI	AK	11	1,980	Daily	Daily	
	BKI	MASWings	15	1,020	Daily	Daily	
Grand Total			395	61,220			
FLIGHTS WITHIN SABAH							
Kota Kinabalu	LDU	MASWings	35	2,380	Daily	Daily	
		MH	14	2,016	Daily	Daily	
		AK	18	3,240	Daily	Daily	
	TWU	MASWings	31	2,108	Daily	Daily	
		MH	14	2,016	Daily	Daily	
		MASWings	14	952	Daily	Daily	
		AK	28	5,040	Daily	Daily	
Lahad Datu	BKI	MASWings	35	2,380	Daily	Daily	
Sandakan	BKI	MH	14	2,016	Daily	Daily	
		AK	18	3,240	Daily	Daily	
	TWU	MASWings	31	2,108	Daily	Daily	
		MASWings	14	952	Daily	Daily	
Tawau	BKI	MH	14	2,016	Daily	Daily	
		AK	28	5,040	Daily	Daily	
	SDK	MASWings	14	952	Daily	Daily	
		MASWings	14	952	Daily	Daily	
		MASWings	14	952	Daily	Daily	
Grand Total			336	37,408			

Source: Respective Airlines

Golf 2013

	International	Malaysian
No. of Pax	14,486	24,144
Total Pax	38,630	
Total Golf Receipt (RM)	RM49.9 mil	

Diving 2013

	International	Malaysian
No. of Pax	52,538	9,645
Total Pax	62,183	
Total Dive Receipt (RM)	RM352.7mil	

MICE 2013

	International	Malaysian
No. of Pax	10,848	23,953
Total Pax	34,801	
Total Event	476	
Total MICE Receipt (RM)	RM 75.4mil	

Respective Hotels & Resorts/Dive Operators/Golf Operators

Sabah Top Ten International Visitor Arrivals - Market Share (Nett)

Country	2012		2013	
	Pax	Market Share %	Pax	Market Share %
1. China <small>including HKG & Macau</small>	193,010	28.6	360,361	40.6
2. South Korea	80,383	11.9	106,213	12.0
3. Brunei	82,499	12.2	99,122	11.2
4. Taiwan	45,479	6.7	52,541	5.9
5. Japan	26,006	3.9	32,506	3.7
6. UK & Ireland	30,723	4.6	30,776	3.5
7. Indonesia <small>by Air</small>	23,858	3.5	29,407	3.3
8. Australia	30,917	4.6	29,184	3.3
9. Singapore	27,778	4.1	28,863	3.3
10. Philippines <small>by Air</small>	33,012	4.9	23,520	2.6

Source: Immigration Dept, Sabah

Tourism Receipts to Sabah Year 2013

	International Malaysian	
Average Per Capita (RM)	2,817.1	1,576.0
Average Length of Stay (Nights)	6.5	4.5
Tourism Receipts (RM Mil)	3,069	3,615
Total Receipt (RM Mil)	6,684	

Tourist Expenditure Average Per Capita and Average Length of Stay (Nights) Year 2013 (RM)

1. Australia	4,356.3	8.5
2. Russia	4,319.0	9.0
3. UK & Ireland	4,222.4	9.7
4. New Zealand	4,150.0	8.7
5. Netherlands	3,594.3	9.9
6. Sweden	3,552.7	9.6
7. Italy	3,513.5	8.7
8. USA	3,317.1	8.8
9. Switzerland	3,313.9	9.8
10. Germany	3,305.3	9.8
11. Denmark	3,215.2	9.6
12. Canada	3,164.3	9.0
13. Finland	3,149.0	9.5
14. France	3,131.6	9.2
15. China & Hong Kong	3,092.1	6.0
16. Belgium & Luxemburg	3,035.0	9.0
17. Norway	3,016.7	9.0
18. Japan	3,006.0	6.3
19. South Korea	2,849.2	6.6
20. Taiwan	2,804.7	6.1
21. Singapore	2,330.2	4.2
22. Brunei	2,291.3	4.2

Source : Tourism Malaysia/Sabah Tourism

Record of interview with Ministry of Rural Development (*Kementerian Pembangunan Luar Bandar/KPLB*)

- (1) Date and time: 14:30-15:30, 5 Dec. 2014
- (2) Interviewees: -
 - Mr. Abu Bakar Abdul Latip, Deputy Permanent Secretary, KPLB
 - Mr. Rozhan Zul Azri bin Talikop, Assistant Secretary, Poverty Eradication Section (including MESEJ), KPLB
- (3) Venue: The office of the Deputy Permanent Secretary, KPLB
- (4) Questions: -
 - Status and monitoring system of poverty and poverty alleviation in CRBR, reconfirmation and updating of the facts on poverty alleviation in Sabah, etc.
- (5) Facts and comments
 - KPLB is only concern about quality of life and income. KPLB has a target group. KPLB doesn't have fund then has to get fund from the federal government (KKLW).
 - In 2009, poverty ratio in Sabah was 19.7%, then in 2012 it decreased to 8.1%. These figures are from the Economic Planning Unit (EPU) and statistic department, under the federal government. They may have updated figures.
 - The hard core poverty line in rural area in Sabah in 2009 was RM670, and it was RM710 in 2012.
 - The data of e-Kasih is not published, but it is available for government agencies on request.
 - Concerning MESEJ (programme implemented by KPLB relocating 33 households to a newly developed plantation of rubber or oil palm for poverty alleviation), we don't call MESEJ as "agropolitan" scheme, as developed area under MESEJ is less than 100ha and too small to call agropolitan scheme. Usually we call larger projects, such as the plantations in Bangi, Pitas, Kota Marudu (Kg. Gana) as agropolitan scheme.
 - Projects sites for MESEJ are selected in stateland, not in the existing villages.
 - In Penampang District, there was one MESEJ project proposed in Kg. Timpangoh Laut three years ago. We cannot confirm if it is in CRBR.
 - In Tenom District, there were some MESEJ and Micro-MESEJ projects three years ago, but all are outside of CRBR. There has been no new MESEJ approved project for these three years.
 - In Tambunan, there were one MESJ project outside CRBR, and 5 projects under Program Kampung Sejahtera (income generation in existing villages) in CRBR three years ago. There has been no new MESEJ approved project for these three years.
 - In Keningau, there were two MESEJ projects with oil palm plantation outside CRBR. There was a proposal of Micro MESEJ Project in Bingkor in CRBR three years ago. It is in fact implemented in another place Apinapin. It is on the west side of the highway then it must be in CRBR.
 - In Tuaran there is no on-going or planned MESEJ project in CRBR.
 - In Papar, we have two MESEJ projects, Kinolosodon 1 and Kinolosodon 2 with rubber plantations just next to Crocker Range Park, then they must be in CRBR.
 - In Beaufort, there are three MESEJ projects in Monteniore 1, Monteniore 2 (both are rubber) and Garama (oil palm). They probably are outside of CRBR.
 - Ranau has no MESEJ project.
- (6) Reference collected (as attached): -
 - Indication of poverty line in Sabah, in 2009 and 2012
 - *Sabah Key Indicators 2012/2013*

016. 8408399

From KPLB
5 Dec. 2014

**PENDAPATAN GARIS KEMISKINAN (PGK)
NEGERI SABAH & LABUAN (2009 & 2012)**

WILAYAH	MISKIN		MISKIN TEGAR	
	PGK 2009	PGK 2012	PGK 2009	PGK 2012
	ISI RUMAH	ISI RUMAH	ISI RUMAH	ISI RUMAH
SABAH & LABUAN	1,050	1,090	630	660
BANDAR	1,020	1,080	590	630
JIAR BANDAR	1,080	1,120	670	710



SABAH KEY INDICATORS 2012/2013



**State Economic Planning Unit
Chief Minister's Department
Sabah, Malaysia**

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TABLE 1 : AREA

Total Land Area (excluding Labuan)	: 73,902 Sq. Km*
Percentage of Malaysia	: 22.4%
Percentage of Peninsular Malaysia	: 39.9%
Population Density (2013)	: 46 per sq km
Compares to Malaysia Population Density (2013)	: 91 per sq km

Source: Department of Statistics Malaysia, Sabah

Note: *Includes Island Area

TABLE 2 : POPULATION

	2009	2010	2011P	2012P	2013P
Population (million) (excluding Labuan)	3.18	3.21	3.32	3.37	3.42
Percentage of Malaysia's Population (%)	11.3	11.2	11.4	11.4	11.4
Annual growth rate (%)	1.6	0.9	3.4	1.5	1.5
Compares to Malaysia's annual growth rate (%)	1.8	1.8	1.6	1.6	1.5

Source: Department of Statistics Malaysia, Sabah

Note: P= population projections

TABLE 2A : POPULATION BY ETHNIC GROUP

Unit ('000)	2009	2010	2011	2012	2013P
Malaysian Citizens	2,254.0	2,317.0	2,457.7	2,510.0	2,563.4 (74.8%)
Malay	357.0	184.2	232.6	241.3	250.3 (7.3%)
Kadazan/Dusun	539.5	568.6	580.1	591.9	603.9 (17.6%)
Bajau	392.8	450.3	459.6	469.3	479.2 (14.0%)
Murut	96.1	102.4	104.6	106.9	109.2 (3.18%)
Other Bumiputera	443.2	659.9	668.8	682.6	696.7 (20.3)
Chinese	279.2	295.7	298.9	302.0	305.2 (8.9%)
Others	146.3	48.5	113.0	104.2	118.9 (3.5%)
Non-Malaysian Citizens	929.8	889.8	858.7	861.7	864.7 (25.2%)
Total	3,183.8	3,214.2	3,316.4	3,371.7	3,428.0 (100%)

Source: Department of Statistics Malaysia, Sabah

Note: P= preliminary, () = % of total population

TABLE 2B : POPULATION BY DISTRICT

Unit ('000)	2009	2010	2011	2012	2013
SABAH	3,183.8	3,214.2	3,316.4	3,371.7	3,428.0 (100%)
Tawau	399.9	402.4	412.1	424.9	428.1 (12.5%)
Lahad Datu	211.4	213.1	211.6	218.3	222.5 (6.5%)
Semporna	139.4	140.4	136.1	144.1	146.2 (4.3%)
Sandakan	450.4	453.5	423.0	424.6	428.9 (12.5%)
Kinabatangan	162.4	165.6	158.0	157.1	159.5 (4.6%)
Beluran	104.6	105.4	107.5	111.2	112.9 (3.3%)
Kota Kinabalu	432.3	436.1	423.9	481.9	487.3 (14.2)
Ranau	87.7	88.8	146.3	102.4	105.2 (3.1%)
Kota Belud	87.8	89.2	94.9	98.9	101.3 (2.9%)
Tuaran	96.6	97.8	110.5	114.0	117.3 (3.4%)
Penampang	158.5	159.6	133.9	136.1	140.0 (4.1%)
Papar	110.0	111.4	145.3	145.3	151.9 (4.4%)
Kudat	84.4	85.4	84.6	87.4	87.7 (2.6%)
Kota Marudu	71.8	72.9	70.5	71.3	72.4 (2.1%)
Pitas	40.7	41.3	41.1	40.5	41.1 (1.2%)
Beaufort	74.9	75.9	75.3	70.6	71.9 (2.1%)
Kuala Penyu	19.7	20.0	21.0	21.5	22.2 (0.7%)
Sipitang	35.2	35.5	39.8	39.4	40.6 (1.2%)
Tenom	54.0	54.4	58.7	60.2	61.6 (1.8%)
Nabawan	30.4	30.7	33.2	34.0	34.8 (1.0%)
Keningau	193.9	195.7	184.3	185.1	187.5 (5.5%)
Tambunan	34.6	35.0	36.8	38.1	39.0 (1.1%)
Kunak	71.3	72.0	67.1	66.3	67.5 (1.9%)
Tongod	31.6	32.0	37.7	37.9	38.6 (1.1%)
Putatan	n/a	n/a	63.0	60.6	62.2 (1.8%)

Source: Department of Statistics Malaysia, Sabah

TABLE 3 : CLIMATE

Unit	2009	2010	2011	2012	2013
Kota Kinabalu					
Air Temperature:					
Mean Max (°C)	32.2	32.4	31.3	32.4	32.1
Mean Min (°C)	24.2	24.3	24.0	24.1	23.8
Rainfall (mm)	2,747.6	3,394.6	2,782.2	2,541.4	3,112.9

Source: Malaysian Meteorological Department & Department of Statistics Malaysia, Sabah

TABLE 4 : LABOUR FORCE

Unit ('000)	2009	2010	2011	2012	2013
Labour Force	1,345.3	1,480.7	1,538.8	1,579.8	1,638.5
(% of Malaysia)	11.9	11.9	12.7	12.0	10.6
Labour Force Participation Rate (%)	65.1	65.9	67.0	67.4	66.8
(compares to Malaysia) (%)	62.9	63.7	64.4	65.5	69.0 (3rd Qtr.)
Unemployment Rate (%)	5.5	5.5	5.6	5.4	n/a
(compares to Malaysia) (%)	3.7	3.3	3.1	3.0	3.1
% Distribution of employed person with tertiary education	15.7	14.1	15.9	15.0	n/a
(compares to Malaysia) (%)	23.3	23.4	24.3	24.3	n/a

Source: Department of Statistics Malaysia, Sabah

TABLE 5 : EMPLOYMENT

Unit ('000)	2009	2010	2011	2012	2013
Number of employed	1,270.6	1,398.6	1,452.7	1,494.5	1,590.8
% of total					
Agriculture, Forestry & Fishing	32.2	35.2	26.0	26.2	27.1
Mining and Quarrying	0.3	0.4	0.4	0.8	0.3
Wholesale & Retail Trade	15.9	16.1	17.4	18.2	20.1
Manufacturing	7.5	8.7	11.2	10.6	9.7
Construction	9.2	8.3	9.4	9.3	9.2
Accommodation & Food Service Activities	6.1	5.5	6.4	7.0	6.0
Public Administration & Defence, Education, Health & Social Work Activity	16.6	12.0	12.2	12.2	11.9
Others	12.2	13.8	17.0	16.5	15.7

Source: Department of Statistics Malaysia, Sabah

TABLE 6 : EDUCATION

Unit (number)	2008	2009	2010	2011	2012
Students per teacher (Primary, Secondary & Technical)	14.0	13.0	12.2	12.4	12.3
(compares to Malaysia)	14.8	13.9	13.3	13.0	12.6
Number of Schools (Primary, Secondary & Technical)	1,271	1,273	1,277	1,283	1,286

Note: Include Government assisted schools

Source: Sabah Education Department, Department of Statistics Malaysia, Sabah

TABLE 7 : MEDICAL

Unit (number)	2008	2009	2010	2011	2012
Population per doctor*	2,407.6	2,132.5	1,908.7	1,865.2	1,821.5
Population per Government doctor	3,267.2	2,773.3	2,418.5	2,293.5	2,219.7
Population per dentist*	21,736.1	18,839.0	17,563.9	14,569.1	11,314.4
Government hospital beds	4,059	4,136	4,136	4,155	4,446
Population per Government hospital bed	771	770	802	798	758
Government hospitals	22	22	23	24	24
Private hospitals/Medical Institution	8	7	7	7	5

Source: Health Department, Sabah. "Social Statistics Buletin Malaysia (2007 - 2012)" publication

Note: Including number of beds in Mental hospital

- Government hospitals including Mental hospital

* Government and private

TABLE 8 : TELECOMMUNICATIONS

Unit (number)	2009	2010	2011	2012	2013
DEL penetration rate per 100 household	18.8	18.8	17.4	17.6	19.6
Cellular telephone penetration rate per 100 inhabitants*	77.8	92.6	88.8	87.6	n/a
Broadband penetration rate per 100 household	14.5	25.6	32.7	47.3	53.8

Source: Telekom Malaysia; Malaysia Communication and Multimedia Commission, Department of Statistics Malaysia, Sabah

Note: DEL = Direct Exchange Line

*Includes Labuan

TABLE 9 : UTILITY

Unit (Mil. Litres)	2009	2010	2011	2012	2013
Production of water per day	877.2	931.2	989.0	1,053.1	1,131.0
Estimated demand of water	986.0	994.0	1,037.0	1,095.0	1,131.8
('000 KW hrs)					
Electricity Generation	4,552.6	4,829.2	4,990.4	5,341.6	5,403.3
Electricity Consumption	3,835.5	4,038.6	4,094.8	4,463.6	4,675.5

Source: Sabah Electricity Sdn. Bhd.

Water Department, Sabah

TABLE 10 : GROSS DOMESTIC PRODUCT

	2008	2009	2010	2011e	2012p
Real GDP (RM Billion)	39.1	40.9	42.1	42.7	44.4
Real GDP Growth (% growth)	10.7	4.8	2.7	1.3	4.1
Income Per Capita (RM)	17,523	15,515	17,118	19,038	19,010
RM billion (% growth)					
Agriculture	10.1 (-3.6)	9.7 (-3.8)	9.3 (-3.9)	9.8 (4.6)	9.2 (-5.4)
Mining and Quarrying	8.0 (85.3)	9.6 (19.9)	9.9 (3.6)	8.3 (-16.5)	9.2 (10.3)
Construction	0.8 (-2.0)	0.9 (6.9)	1.0 (19.1)	1.1 (7.5)	1.3 (13.1)
Manufacturing	3.4 (2.4)	3.1 (-7.7)	3.3 (4.7)	3.5 (5.8)	3.5 (0.3)
Services	16.5 (2.2)	17.4 (5.0)	18.2 (5.1)	19.8 (8.3)	21.1 (6.5)

Source: Department of Statistics Malaysia, Sabah

Note: GDP in Constant 2005 prices

Note: Income Per Capita at Current Prices

e=estimate, p=preliminary

TABLE 11 : EXTERNAL TRADE AND INFLATION

	2009	2010	2011	2012	2013P
Merchandise Exports (RM billion)	37.2	43.6	49.4	47.7	45.4
Merchandise Imports (RM billion)	26.0	27.9	32.8	37.4	36.0
Trade Balance (RM billion)	11.2	15.7	16.6	10.3	9.3
Inflation Rate (%)	1.7	1.6	2.9	1.8	1.8

Source: Department of Statistics Malaysia, Sabah

TABLE 12 : MAJOR TRADING PARTNERS

	2009	2010	2011	2012	2013
Total Exports (RM billion)	37.2	43.6	49.4	47.7	45.4
Exports to:					
(% share)					
Peninsular Malaysia	10.2	11.5	11.7	12.6	14.7
Japan	4.0	4.4	5.5	5.6	4.2
China	20.9	18.0	22.1	18.2	13.3
India	8.6	7.5	7.9	10.0	14.7
Australia	8.0	10.8	8.5	14.6	13.4
Thailand	6.3	6.5	5.0	4.6	3.9
Pakistan	2.7	5.0	3.5	2.5	2.0
Korea	4.1	4.4	5.5	3.8	2.9
Netherlands	3.7	3.8	4.2	4.8	4.8
Sarawak	5.3	5.0	4.9	4.4	5.9
Total	73.8	76.9	78.8	81.1	79.8

TABLE 12 : MAJOR TRADING PARTNERS - (CONT.)

	2009	2010	2011	2012	2013
Total Imports (RM billion)	26.0	27.9	32.8	37.4	36.0
Imports from:					
(% share)					
Peninsular Malaysia	49.2	48.5	48.1	49.8	51.4
USA	9.6	6.1	4.9	4.7	4.5
Japan	3.1	3.1	3.3	3.9	3.0
Sarawak	1.1	1.1	0.9	0.9	0.8
Singapore	10.0	11.7	13.7	12.1	13.4
China	4.7	5.8	5.2	5.5	6.1
Total	77.7	76.3	76.1	76.9	79.2

Source: Statistics Department of Sabah

TABLE 13 : MAJOR EXPORT ITEMS

Unit (% share)	2009	2010	2011	2012	2013
Palm Oil	33.8	34.7	38.9	35.0	31.8
Crude Petroleum	37.4	35.4	32.9	38.8	40.2
Plywood	3.5	2.9	2.4	2.1	2.3
Sawn Timber	2.0	1.6	1.1	0.8	0.8
Palm Kernel Oil	3.3	4.7	5.6	3.8	3.7
HBI	1.3	2.5	2.0	1.8	1.1
Methanol	1.9	2.4	2.7	3.2	2.8
Veneer Sheets	0.4	0.4	0.2	0.2	0.2
Total	83.6	84.6	85.8	85.7	82.9

Source: Department of Statistics Malaysia, Sabah

TABLE 14 : MAJOR IMPORT ITEMS

Unit (% share)	2009	2010	2011	2012	2013
Food	10.2	9.8	10.1	10.0	10.4
Mineral fuels, lubricants etc.	18.2	20.1	21.3	17.9	21.6
Manufactured goods	13.8	13.1	14.2	17.3	13.1
Chemicals	10.2	10.8	11.2	9.7	9.8
Machinery and transport equipment	32.8	30.6	28.4	31.4	31.8
Total	85.2	84.4	85.2	86.3	86.7

Source: Department of Statistics Malaysia, Sabah

TABLE 15 : FORESTRY

Unit ('000 m ³)	2009	2010	2011	2012	2013P
Sawlogs production	4,252	3,484	2,212	1,966	1,773
Sawn Timber production	741	515	356	326	269

Source: Department of Statistics Malaysia, Sabah

TABLE 16 : AGRICULTURE

Unit (tonne)	2009	2010	2011	2012	2013P
Crude Palm Oil Production	5,449,694	5,315,996	5,843,165	5,542,649	5,776,459
Palm Kernel Production	1,233,027	1,202,802	1,317,779	1,253,902	1,315,888
Cocoa Beans Raw/ Roasted Exports	4,117	4,477	1,828	1,742	1,225
Rubber Exports	63,494	55,088	51,348	59,681	56,405

Source: Department of Statistics Malaysia, Sabah

TABLE 16A : LAND UTILIZATION BY CROP PLANTED

Unit (ha)	2008	2009	2010	2011	2012P	% Share 2012
Oil Palm	1,330,364	1,311,164	1,414,625	1,447,024	1,452,584	88.0%
Rubber	75,082	80,139	87,028	108,083	115,306	7.0%
Paddy	38,935	43,413	43,168	45,275	39,621	2.4%
Cocoa	8,399	7,075	6,936	6,488	4,133	0.2%
Coconut	18,875	17,555	18,083	16,713	16,756	1.0%
Coffee	2,749	2,595	2,582	2,550	2,368	0.14%
Sugar Cane	29	36	73.2	78	49	0.003%
Tea	362	362	362	365	413	0.02%
Tobacco	571	177	183	136	121	0.01%
Fruits	17,412	17,726	17,815	17,546	17,674	1.07%
Vegetables	2,767	2,921	2,945	4,224	2,978	0.18%
Cash Crops	1,778	1,862	1,900	1,713	1,596	0.1%
Spices	685	770	540	498	484	0.03%
Others*	1,165	1,100	995	1,100	995	0.06%
Total	1,499,173	1,486,895	1,597,235	1,651,793	1,655,078	100.0%

Source: Agriculture Department, Sabah

*Including sweet potatoes, yam, potatoes, ground nuts, soya beans, long beans and sago

Note: P= Provisional Data (subject to changes)

TABLE 16B : LIVESTOCK PRODUCTION

	2009	2010	2011	2012	2013e	2013e Self-sufficiency
Beef (metric tonnes)	464	222	529	479	484	11%
Pork (metric tonnes)	7,844	7,788	8,050	8,670	8,666	100%
Chicken (metric tonnes)	37,730	40,765	28,972	37,968	41,306	89%
Duck (metric tonnes)	370	288	591	473	450	89%
Chicken Eggs (million pcs)	505	540	603	574	580	100%
Duck Eggs (million pcs)	3.1	3.1	4.9	4.7	4.7	100%
Fresh milk (million litres)	7.04	8.2	8.7	9.6	8.5	85%

Source: Veterinary and Livestock Department, Sabah

Note: e= estimate

TABLE 16C : FISHERY PRODUCTION

Unit (tonne)	2008	2009	2010	2011	2012
Marine Fish	173,999.29	172,570.60	174,579.32	176,945.23	178,062.71
Fish	149,819.16	150,998.26	149,409.84	150,093.12	151,834.89
Prawn	8,514.46	9,194.56	10,501.19	10,972.98	11,840.68
Mollusc	11,861.45	8,744.77	11,170.60	12,404.31	10,852.18
Brackish Water Fish	7,821.98	13,432.54	22,012.25	17,146.27	14,542.74
Seaweed	11,129.85	138,855.90	207,850.40	239,405.00	331,470.00
Fresh Water Fish	4,893.39	4,934.85	4,939.12	4,145.03	4,048.42
Total	197,844.49	329,793.89	409,381.09	437,641.55	520,113.87
Unit (pcs)					
Ornamental Fish	10,840	19,250	29,570	133,881	93,909
Fish Fry - Government					
Fish Fry (Freshwater)	3,793,620	3,971,554	4,513,623	4,555,096	1,971,583
Fish Fry (Brackishwater)	108,182	152,715	4,910	21,135	37,500
Fish Fry - Private Sector					
<i>Penaeus Monodon</i>	59,000,000	43,100,000	20,218,000	26,347,620	10,800,000
<i>Penaeus Vannamei</i>	169,114,000	575,700,000	595,238,500	1,128,935,080	1,079,641,750
Fish Fry (Freshwater)	1,173,850	1,136,100	1,244,030	4,226,091	37,500
Fish Fry (Brackishwater)	6,650,000	7,228,062	9,360,823	6,735,795	6,833,947
Freshwater Prawn	n/a	n/a	n/a	49,000	8,200
Total	239,850,492	631,307,681	630,641,156	1,170,883,698	1,103,728,855

Source: Fishery Department, Sabah

Note: Brackish water fish culture includes fish, prawn, mussels, oyster and others

TABLE 17 : MANUFACTURING

Unit ('000 M ³)	2009	2010	2011	2012	2013
Exports of Sawn Timber	461	463	363	245	242
Exports of Veneer Sheets	98	147	74	46	53
Exports of Plywood	992	910	764	643	649
Exports of Wooden Mouldings	56	54	39	30	19
Tonne					
Exports of Palm Kernel Oil	536,160	582,102	565,251	509,693	664,043
Exports of Methanol	1,162,832	1,267,413	1,258,051	1,429,874	1,122,772
Exports of Hot Briquetted Iron	479,369	775,278	719,368	680,865	475,098
Exports of Uncoated Printing and Writing Paper	133,686	123,945	104,495	120,350	113,377

Source: Department of Statistics Malaysia, Sabah

TABLE 18 : TOURISM

Unit	2009	2010	2011	2012	2013
Foreign arrivals (number)	562,144	795,953	845,910	941,795	1,089,320
Annual growth (% p.a.)	-19.8	41.6	6.3	11.3	15.7
Domestic (number)	1,683,924	1,708,716	1,998,687	1,933,996	2,293,923
Annual growth (% p.a.)	5.3	1.5	17.0	-3.2	18.6
Total arrivals (number)	2,246,068	2,504,669	2,844,597	2,875,761	3,383,243
Annual growth (% p.a.)	-2.4	11.5	13.6	1.1	17.6

Source: Sabah Tourism Board

TABLE 19 : TRANSPORT

Unit	2009	2010	2011	2012	2013
Cargo discharged at all airports (million kg.)	18	19.0	16.4	14.5	n/a
Cargo loaded at all ports (mil.tonne)	13.6	14.6	14.6	13.9	14.0
Cargo discharged at all ports (mil. tonne)	10.7	13.9	13.3	13.9	13.5
Imports of motor cars	22,451	24,514	26,409	26,300	30,036

Source: Department of Statistics Malaysia, Sabah

TABLE 19A : LENGTH OF ROAD BY TYPE

Unit (Kilometre)	2008	2009	2010	2011	2012
Sealed	8,130	8,480	9,388	9,718	10,377
Gravel	10,886	10,707	10,154	10,417	10,101
Earth	679	635	595	666	658
Total	19,695	19,822	20,136	20,799	21,136

Source: Sabah Public Works Department

TABLE 20 : GOVERNMENT FINANCE

Unit	2009	2010	2011r	2012	2013e
Government Revenue (RM billion) (% share)	3.0	4.2	3.8	4.4	4.1
Collection from Forest	9.8	6.1	4.0	3.3	2.4
Collection from Lands	4.8	5.3	6.6	5.1	6.0
Collection from Petroleum Royalty	27.4	23.6	21.8	23.4	24.0
Collection from Proceeds, Dividends and Interest	11.5	5.8	24.9	23.4	28.1
Sales Tax on Crude Palm Oil	26.2	25.7	26.2	27.9	22.9
Federal Grant and Contributions	10.1	8.4	8.6	8.5	8.4
Total Government Expenditure (RM billion) (including Development Exp.)	3.9	5.3	5.4	5.6	6.4
Government Development Expenditure (RM billion)	1.0	1.6	0.9	1.1	1.3

Source: State Ministry of Finance

Note: * = Estimates from "Estimates of Revenue and Expenditure for the Year 2014" publication

Note: Government expenditure includes Federal Reimbursements, Federal Loans and State Government Funding

Note: r= revised, e= estimate

TABLE 21 : BIMP-EAGA

Unit	2009	2010	2011	2012	2013
Sabah Exports to: (RM '000)					
Philippines	634,592	1,641,110	2,115,509	1,473,512	705,676
Annual change (% p.a.)	-44.8	159.0	28.9	-30.3	-52.1
Indonesia	3,532,728	1,316,347	851,639	607,646	471,669
Annual change (% p.a.)	1.5	-62.7	-35.3	-28.6	-22.4
Brunei Darussalam	237,034	252,160	294,535	561,764	396,763
Annual change (% p.a.)	-10.8	6.4	16.8	-27.5	-29.4
Sabah Imports from: (RM '000)					
Philippines	182,643	274,532	210,501	227,972	289,426
Annual change (% p.a.)	-45.7	50.3	-23.3	7.3	27.0
Indonesia	1,359,843	1,308,716	1,265,349	1,297,325	857,370
Annual change (% p.a.)	99.9	-3.8	-3.3	2.8	-33.9
Brunei Darussalam	9,476	18,450	23,808	13,954	17,421
Annual change (% p.a.)	31.2	94.7	29.0	-40.3	24.8
Trade Balance with: (RM '000)					
Philippines	451,949	1,366,578	1,905,008	1,245,540	416,250
Indonesia	2,172,885	7,631	-431,710	-689,679	-385,701
Brunei Darussalam	227,558	233,710	270,727	547,810	379,342

Source: Department of Statistics Malaysia, Sabah.

TABLE 22 : POVERTY RATE

Unit (%)	2004	2007	2009	2012
Poverty Rate	23.0	16.0	19.7	8.1
Hardcore Poverty Rate	6.5	3.7	4.8	1.6

Source: Department of Statistics Malaysia, Sabah

TABLE 23 : MEAN MONTHLY HOUSEHOLD INCOME

Unit (RM)	2004	2007	2009	2012
Sabah	2,487	2,866	3,102	4,013
Malaysia	3,249	3,686	4,025	5,000

Source: Department of Statistics Malaysia, Sabah

State Economic Planning Unit
Lot 6 - 10, Wisma SEDIA,
Off Jalan Pintas, Penampang
88300 Kota Kinabalu
Sabah, Malaysia



Record of interview with Sabah Parks

- (1) Date and time: 9:00-10:30, 9 Dec. 2014
- (2) Interviewees: -
 - Mr. Ludi Apin, Park Manager (Terrestrial), Sabah Parks
- (3) Venue: The office of Mr. Ludi Apin, Sabah Parks
- (4) Questions: -
 - On-going and planned activities on economic incentive for biodiversity conservation in CRBR, etc.
- (5) Facts and comments
 - At present Sabah Parks already charge water supply from Kinabalu Park in Kundasan area. We only charge for commercial use, while we don't charge for use by local community. The rate is RM900 a year regardless amount of usage. The main commercial users are hotels and restaurants. We charge only to those who applied to us. The charge is applied to commercial users whose water intakes within the park boundary. DID has a plan to channel water from the park to surrounding communities.
 - In Crocker Range Park, there are many dikes for channeling water to irrigation and local communities downstream. We don't charge it as the whole use is considered as non-commercial use, though the irrigation for paddy in Tambunan could be considered as commercial use.
 - The decision was made by the board for Sabah Parks more than 10 years ago to charge for water use from the parks with demarcation of commercial and community uses. "Commercial use" is defined as activities generating cash income.
 - There is no micro hydro power generation facility in Crocker Range Park. Even if we had it, we would not charge it unless it is commercial use.
 - The estimation of water volume from main rivers from CRP is done by Maipol. The estimation covers only for the eight main rivers, a part of total volume of water flowing out from CRPP. If we have a long term Hydrological monitoring data in CRP. It is very effective way of estimating water volume. 3 years data is required.
 - I understand that Kinabalu Eco-Linc is only activity directly related to REDD+ Sabah Parks implement.
 - What we collect at the entrances of the parks is not entrance fee, it is conservation fee. The collected fee goes to Trust fund of Sabah Parks at first.
 - We also collect guide fee for Kinabalu, and CRP.. It is paid to guides registered by Sabah Parks. Payment is controlled by Sabah parks.
 - We also collect the permit fee, from a point to another point. (Masilau - Laban Rata, - the peak) which is fed to trust fund.
 - The total collected fee is not enough to bear the whole cost of management of the parks. MONRE requested Sabah Parks to establish sustainable financing of park management totally depending on conservation fee collected from visitors, but it is argumentative. I said we cannot. The government should pay various public services the Park provided, not only recreational services which can be paid by tourists.
- (6) Reference collected (as attached): -
 - Programmes for visitors organized by Sabah Parks and charge
 - List of fees set by Sabah Parks

2014/12/9
from Ludic SP

Programmes & Charges

NO.	PARK	PROGRAMMES	CHARGES (RM) Per person		DAY/ TIME	VENUE
			M'sian	Non M'sian		
1.	Kinabalu Park	Botanical Garden	4.00	5.00	Daily 9am, 12am, 3pm	Kinabalu Park
2.		Guided Walk	2.00	3.00	Daily 11am	
3.		Muti-Vision Show	2.00	2.00	Daily/ 2pm Weekend & Public Holiday (Friday- Monday)/ 7.30pm	
4.		Kinabalu Natural History Gallery	2.00	3.00	Daily 9am – 3pm	
5.		Package 1-3	6.00	8.00	As stated above	Poring Hot Spring
6.		Canopy Walk	3.00	5.00	Daily 9am – 4pm	
7.		Butterfly Farm	3.00	4.00	Daily 9am – 4pm except the next day of Public Holiday	
8.		Package 6-7	4.00	7.00	As stated above	
9.		Tropical Garden	2.00	3.00	Daily 1.30pm	
10.		Orchid Conservation Centre	5.00	10.00	Daily 11am, 2.30pm & 3pm	
11.	Package 9-10	4.00	7.00	As stated above	Mesilau Nature	
12.	Nephentes Rajah Natural Site	5.00	10.00	Daily 9am – 4pm		
13.	Tunku Abdul Rahman Park	Marine Exhibit Centre	2.00	3.00	Daily 9am – 3pm, except Monday	Manukan Island

SABAH PARKS FEES

2014/12/9
from Ludi SP

KINABALU PARK

	Non-Malaysian RM	Malaysian RM	
Entrance/ Conservation	15.00	3.00	18 yrs & above
	10.00	1.00	Below 18
	15.00	1.00	Above 55
Climbing Permit (From Timpohon Gate/ Mesilau Substation)	100.00	30.00	18 yrs & above
	40.00	12.00	Below 18
	100.00	12.00	Above 55
Expedition	200.00	100.00	18 yrs & above
	5.00	2.00	Below 18
	200.00	50.00	Above 55
Insurance	7.00	7.00	Person/ day
			RM50,000
			RM50,000
			RM5,000
		RM2,000	
Certificate (per person)	10.00	1 st Class, full colour, up to summit	
	1.00	2 nd Class, Black & white, down from summit	

OTHER PARKS

	Non-Malaysian RM	Malaysian RM	Location
Entrance/ Conservation	10.00	3.00	All Parks area except Turtle Islands Park Per person
	18 yrs & above	18 yrs & above	
	6.00	1.00	
	Below 18	Below 18	
	10.00	1.00	
	Above 55	Above 55	
	6.00	FOC	
Below 6	Below 6		
	0.50		
	Student below 16		
	60.00	20.00	TIP only
	18 yrs & above	18 yrs & above	
	30.00	10.00	
	Below 18	Below 18	
Expedition	200.00	100.00	All Parks area Per person
Barbecue	5.00	5.00	All Parks area Per person
Camp site	5.00 (18 yrs & above) 2.00 (Below 18)		All Parks area Per person/ per night
Diving (per person / per day)	50.00	20.00	TARP, PTP & TIP
	40.00	40.00	Sipadan Island Park

Record of interview with Kota Kinabalu City Hall (DBKK)

- (1) Date and time: 10:30-12:00, 9 Dec. 2014
- (2) Interviewees: -
 - Datuk Yeo Boon Hai, Director General, Kota Kinabalu City Hall (DBKK)
 - Syron A. Tanggolou, Public Relations Officer (Contact: Syron@dbkk.sabah.gov.my, 2514182, 016-8181574)
- (3) Venue: The meeting room, DBKK
- (4) Questions: -
 - Status of rural development in CRBR, reconfirmation and updating of the facts in the draft buffer zone management plan of CRBR in 2011, etc.
- (5) Facts and comments
 - Babagon dam is within the administrative boundary of Kota Kinabalu.
 - We don't have MESEJ project in Kota Kinabalu but there are some private rubber plantations.
 - In the Ridge Conservation Area classified by Town and Regional Planning, development is still accepted by classifying it as the "Residential Special," where some limitation is applied (1 house per acre).
 - The population of Kota Kinabalu is 465,000 at present. Within it, the country side (inland from Kg. Kokol), we may only have less than 5,000 people.
 - In ridge top areas, development should be controlled according to the Sabah Conservation Strategy in 1992.
 - We used to enter Kinabalu Park for free, when I was DO in Kudat.

Record of interview with Water Department and JETAMA

- (1) Date and time: 14:30-16:00, 9 Dec. 2014
- (2) Interviewees: -
 - Mr. Lim Lam Beng, Deputy Director, Water Department
 - Ms. Rosina Daisy, Chief Engineer (Operation and Management), Water Department
 - Mr. Mohd. Azri, Chief Engineer (Planning and Development), Water Department
 - Mr. Albert Lim, Technical Manager, JETAMA Sdn. Bhd.
- (3) Venue: The meeting room, Water Department
- (4) Questions: -
 - Feasibility of PES through water supply service secured by CRBR
- (5) Facts and comments
 - JETAMA: We take water supply treated water to the government. The Babagon dam is owned by the Water Department, we take water from the dam. JETAMA's client is the Water Department.
 - Our water supply is sourced in rivers and rivers and dams. We support people in the watershed who want to open and develop the area. The development in the watershed affects quality of supplied water much. The water quality matters, while water flow is not much affected by development in the watershed.
 - The watershed of Babagon dam is not accessible then it is not developed much. A few chicken farms exist but their impact is not significant. The quality of water from Babagon dam is very good. Quality of water taken from river is out of our control.
 - Quarry in watershed could affect water quality much. They remove forest and dig up the ground then it causes pollution.
 - Majority of the watershed of Babagon dam is protected areas. Villages in the watershed were to sites relocated nearby Babagon dam. There is no village at present in the watershed of Babagon dam, as it is crucial for water supply to the state capital.
 - Area of the watershed of Babagon dam is 30km² as a part of the whole watershed of Moyog river (200 plus km²). We have many tributaries along Moyog river.
 - We have to follow whatever regulations DID (acting director for Water Resources) applies.
 - Water Department is users of raw water (river), while the Water Resources Council. Water resource is the state matter rather than the federal matter.
 - JETAMA is one of the water concessionaires for water supply. It is in charge of Kota Kinabalu,
 - The Water Resources Council is the one who determine water resources management and we are supposed to follow the decisions.
 - Thus, it is not Water Department to impose the water bill for conservation of watershed as PES. Once the Director of Water Resources asks us such payment, we will pay. Approval by the state assembly or cabinet is not needed for such decision.
 - Our Chief Minister is a chairman of the Water Resources Council. NRO is the secretary. Water Department, Lands and Surveys Department and other concerning agencies are members of the Council.
 - Director of DID is currently an acting director of Water Resources. Water Resources Department is not fully established. Then there is a conflict among JPS, as they are a water user while they are also a water conservator.
 - Currently we cannot increase bill for drinking water, though we have an authority to determine the bill. Drinking water is heavily subsidized by the government. Payment for water supply services could be between a government agency to another government agency, rather than payment from the end users.

Record of interview with Sabah Forestry Department

- (1) Date and time: 8:30-10:00, 10 Dec. 2014
- (2) Interviewees: -
 - Mr. Frederick Kugan, Deputy Director (Forest Sector Planning), Sabah Forestry Department
- (3) Venue: The office of Mr. Kugan, The Headquarters of Sabah Forestry Department in Sandakan
- (4) Questions: -
 - Progress of the PES policy formulation under the UNDP-GEF project (Project on Biodiversity Conservation in Multiple-use Forest Landscape in Sabah, Malaysia)
 - Progress of on-going and planned activities by the Department for PES such as Malua Biobank, REDD+, studies on PES, forest certificate, etc.
- (5) Facts and comments

(Progress of the PES policy formulation under the UNDP-GEF project)

- Yesterday (9 Dec. 2014) we had the 3rd Project Board Meeting. In the meeting we made a few changes on the subcontract for PES policy formulation. Originally, we had in total three subcontracts on Malua Biobank, REDD+ and the PES policy formulation. These are combined, reorganized and split in two, 1) subcontract on state level policy, and 2) subcontract on investment. The revised plan of the subcontracts will be documented by the end of 2014.
- The Technical Working Group of the Project is chaired by Dr. Glen Reynolds, Royal Society. Dr. Junaidi Payne, Dr. Rahimatsah Amat and other local scientists are members of the working group.
- The Technical Working Group reports to the Project Board which is chaired by NRO. The Secretary of the Board is SFD. Mr. Jeflus Sinajin is Project Director and Mr. Kugan is National Director. SaBC is also a member of the board.
- The project is with international funding through UNDP-GEF for 5 years from 2013. Under the Project, we started study on No Net Loss policy, and Business and Biodiversity Offsets Programme (BBOP). We hired Forest Trend as our contractor for the study.
- Progress of the project is slow. We now focus on policy issues. No Net Loss and biodiversity assessment are given the first priority at present.
- Though in the draft inception report, commencement of the subcontract for PES policy formulation is scheduled in October 2015. Based on the progress of the project up to now, it would be delayed.

(Progress of on-going and planned activities for PES by the Department)

- Not so much.
- We have come out with some proposals prepared internally to charge ecosystem services such as water usage in the forest reserves. Such payment can be conditions to issue licenses for concessionaires and any other operators occupying the forest reserve, by putting the condition in the license agreement.
- We are also discussing application of PES to the geothermal power project planned in Andrassy Forest Reserve, Tawau. Malua Biobank is another effort of application of economic incentive for conservation.
- We conducted case studies of PES during our visit to the American countries. Dr. Robert Ong, Deputy Head, Forest Research Centre, SFD went to Costa Rica, and other countries for the study.
- Concerning conservation fees collected from tourists, we can discuss collection at entry points including airport, or at all hotels like the Heritage fee in Melaka. 21% of the area of Sabah is currently protected areas and we target to increase it to 30% in future.
- Concerning the water supply service provided by forest, legal definition of such service is critical. Forest produce and services are defined in the forest enactment. To include carbon fixation as a service provided by forest reserves in legal sense for the EU-REDD+ Project, we revised the

enactment recently in 2013. Then we now can prepare rules and regulations to conserve and transact the service. It is a part of the REDD+ roadmap we prepared.

(REDD+)

- Under the EU-REDD Project, we are getting to implement pilot projects. "Permanency issue" of the pilot projects was raised by MONRE. They even questioned permanency of Kinabalu Ecolinc, as the area is owned by communities. They don't know what is community conserved area.
- Another pilot project in Kg. Gana and its surrounding forest reserve has the same issue. Woodlots under management by the communities there is additionally planned. The officers are skeptical especially Datuk Sam Mannan himself.
- The other pilot project under EU-REDD Project is in Kinabatangan, by Wildlife Dept. they deal with land owners, oil palm plantations and logging operations to establish a corridor providing connectivity. They work together with FELDA Global Ventures, discussion how to improve connectivity. They also apply Environmental and Social Safeguards (ESS) for REDD+.
- Within the REDD+ Roadmap, a committee, 4 Task Forces (TFs) such as, Finance TF, Environmental and Social Safeguards (ESS) TF, Policy TF and Technical (Measurement Reporting and Verification/MRV) TF.

(Malua Biobank)

- Small number of biodiversity credit issued by Malua Biobank has been sold, though we targeted anybody marketing internationally. One of the reason for the small transaction is the global market recession. The mechanism of Biobank also competes with the conventional donation and philanthropy. Biobank is business, while a lot of people just want to donate. We extended for another year to finance the project. It is too early to conclude Biobank. The market is not ready for transaction of biodiversity value. Even for the carbon transaction, people are still skeptical.

(Forest certification)

- We have given a new license for next five years from FSC. Not only FSC, but applying any scheme at various levels, we will certify our forest. For those who are not able to get forest management certification, Verification of Legal Origin (VLO) can be applied, which is more towards the market in EU. The most important target is everything from the forest is legal and has clear origins. The legality verification program as a progressive, two-tiered system. Once they clarify legal origin of timber by VLO, they can moved upward to Verification of Legal Compliance (VLC).
- One of the issue in FSC is that the FSC certification is forbidden to any forest plantations established in areas converted from natural forests after 1994.
- We also plan to get our protected areas certified. Though no timber is produced from the protected areas, they can still be certified.
- We will address the stages to reach the target for full certified produce in Sabah. We audit long-term license holders for their compliance to laws and regulations. Once the compliance is confirmed, we will check requirements for certification. After confirmation, we will issue certification.

(Market base conservation, what comes next?)

- Biodiversity offset for oil palm plantation. RSPO is now discussing compensation through biodiversity offset. Problem is small holders. Small holders tend to go to MSPO, the Malaysian version of RSPO, rather than RSPO.

(The three forest reserves in CRBR)

- We are going to prepare management plans for all FRs in Sabah, including the three FRs in CRBR.
- The management plans for the FRs might be simple, and we can just document the plans. We prepare 10 years plan updated every 5 years. Management plan is also necessary for forest certification.
- CRBR is included in the corridor project connecting Kinabalu Park, CRP, Sipitan, brunei, Sarawak and Kalimantan, under HoB.

(Lower Kinabatangan and Segama Wetlands/LKSW)

- The core area of LKSW is forest reserve, which can be managed by us, SFD.
- We have a contract UMS to conduct social baseline survey, providing feedback to the EE aspect.
- There are many conservation initiatives in the Kinabatangan river basin. You have your own way under LKSW.
- We have restored riparian reserve, 15 meter from the river bank adopting voluntary basis approach. Riparian reserve was surveyed and legally marked but in some parts river course changed. If river bank shifted to inland to the boundary of riparian reserve and alienated land, legally they can plant crops up to the river bank.

Record of interview with Malaysia Palm Oil Association (MPOA)- Sabah

- (1) Date and time: 14:00-16:30, 10 Dec. 2014
- (2) Interviewees: -
 - Mr. Ganga G. Pilai, Executive Secretary, Malaysia Palm Oil Association (MPOA)- Sabah
- (3) Venue: The office of MPOA-Sabah, Sandakan
- (4) Questions: -
 - Status and problems of RSPO as its member
- (5) Facts and comments
 - Awareness of the planters about biodiversity conservation has improved.
 - Datuk Sam Mannan, the director of Sabah Forestry Department is very much aware of collaboration with the oil palm industry.
 - The reforestation project in Kinabatangan funded by Nestle is based on voluntary action by the oil palm industry.
 - Conservation of riparian reserve is not voluntary, it is mandatory. Planting crops in riparian reserve is illegal. However, sometimes erosion of river bank makes the plantation close to the river bank.
 - Ms. Maria Ajik, SFD recently reported in her Facebook page about illegal opening in forest reserve.
 - Concerning the news that MPOA would exit RSPO, the new Chief Executive of MPOA is not happy with RSPO, as he sees RSPO is one-sided to European. The other certification body, MSPO is getting mandatory and more suited for small holders and all oil palm planters. However, RSPO is voluntary and is applicable for only big companies.
 - In particular, in the EU countries, they don't buy product without the RSPO certification. Their concern is not only environmental impact, but also safety feature and human right.
 - In China and the eastern country, such as India and Pakistan, they buy our palm oil. China buys crude oil from us then process and sell them to EU. However, now the EU countries are getting more aware of origins of palm oil in the final products.
 - It is up to you to prove timber origin when you sell it to the EU countries. They buy rubber wood.
 - Japan is going to organize Olympic game in 2020. There is a protest for Japan's import from illegal timber logged from Sarawak for the Olympic stadium.
 - MPOA is an association, RSPO members are our member, such as Sime Darby. MPOA is the secretariat of RSPO. The new CE discusses that we could quit the secretariat, but it didn't materialized. I am not sure what happened in KL. MPOA council members definitely don't like how RSPO run following European NGOs' rule.
 - IOI has their own infrastructure in Europe, then they cannot quit RSPO. So does Sime Darby and Felda Global Ventures. These big company certifies almost all their estates.
 - Trade statics are available from MPOC, in their magazine, "Oil and Fats."
 - Small holders are selling their product to china. Big company such as KRK, who has some mills, determines to select some mills for the EU market with the RSPO certification, while using the other mills for the local and china markets. They have two mills side by side, one of which is for RSPO and the other is for the local market. Even medium size planters are getting more and more RSPO oriented.
 - In sabah we have 30 members RSPO. The number of RSPO has increased.
 - The United Planation, Danish company in West Malaysia is a pioneer for the RSPO certification, but they don't have an estate in Sabah.
 - MPOA annual report, 2013 is available and downloadable from the website.
 - Compliance of RSPO certification has been becoming more strict and rigid. Their focus is now also on human right, child labor, etc. That is like they change a goal post. RSPO has a biased view.

- RSPO may have hidden agenda to protect the vegetable oil industry in Europe which cannot compete with palm oil. Different from canola and soy bean field, oil palm plantation can be considered as forest according to UN definition (with 60% forage cover). Production of palm oil is more efficient in the same area of the land.
- The European market doesn't like any product with palm oil, pursuing "palm oil free."
- The criteria for RSPO certification at present give priority to safety of workers such as investing them helmets. In Indonesia, RSPO applied living conditions of workers as one of the criteria. Then Indonesia abandoned RSPO and made their own Indonesian Sustainable Palm Oil Foundation (ISPO) and mainly sell the palm oil to china and India.
- Our own MSPO doesn't work for the EU market. While the US market doesn't mind palm oil certification much. It is similar to the timber certification. According to preferences of different markets, we could apply different palm oil certifications, in the same way as the certifications in the timber industry.

Record of interview with Tuaran District Officer

- (1) Date and time: 9:30-11:00, 11 Dec. 2014
- (2) Interviewee
 - Mr. A. K. Ibnu Haji A. K. Baba, District Officer, Tuaran (Tel. +60 13 8963883)
- (3) Venue
 - Tuaran District Office
- (4) Questions: -
 - Update of the socioeconomic and poverty status in Tuaran (since the planning of CRBR management in 2011 under BBEC II)
 - Comments on introduction of Payment for Ecosystem Services (PES) to CRBR
 - Comments on the pilot project in Tudan under SDBEC
- (5) Facts and comments

(Comments on PES)

- You understand our issues of poverty alleviation and environment that monoculture plantation of palm oil and rubber is a mainstream of rural development and poverty alleviation in Sabah, though it has negative impact on biodiversity and ecosystem services. That is correct in particular in the Buffer Zone and Transition Area of CRBR. For this we cannot stop deforestation in the privately owned land there.
- In our district, LIGS (*Lembaga Industri Getah Sabah*/Sabah Rubber Industry Board) promote rubber plantation and oil palm plantation is also promoted by the government. They are trying to increase rubber and oil palm plantation in the “idle land.”
- The land alienated to communities but yet to be developed is considered as idle land. RISDA (Rubber Industry Small holders Development Authority), LIGS, etc. subsidize plantation of oil palm and rubber in the idle land, without understanding ecosystem services provided by forest in the idle land.
- By having a policy to conserve CRBR through PES, the land owners in the Buffer Zone and Transition Area may have the third option after 1) to develop or 2) not to develop, such as 3) not to develop but making profit through conservation and rehabilitation of natural forest.
- We, District Office is assisting people to get the land, and improve economic condition by promoting them to plant rubber trees and oil palm. I fully agreed with improving economic condition through conservation approach.
- The question is what is a mechanism enabling PES. When we are implementing each of necessary activities? How we can align them properly?
- We must identify villages in the Buffer Zone and Transition Area. As you said, we have in total 61 villages in CRBR in Tuaran, then JKKK of these villages should be educated.
- I don't see there is a big problem for introduction of PES in CRBR, as long as we have an appropriate mechanism established. If we establish such mechanism, nature conservation is getting more attractive option. Without damaging forest, you can still get profit more than what you get from rubber and oil palm.

(The pilot project in Kg. Tudan)

- In Tudan, they are introducing sustainable development as an approach for conservation. They are trying to increase economic level and conserve nature at the same time.
- The question is, if their economic income is comparable with other villages having oil palm or rubber plantation, if the sustainable development in Tudan would be economically as attractive as the destructive monoculture plantation.
- Rubber and oil palm plantation is subsidized much. Communities to develop plantation do not need to bear the preparation and planting cost at all.

- District Office is an implementer of the policy. The government lay down the program and policy, subsidizing everything to promote the policy. District Office is just implementing following them.
- The cabinet and KPLB (Ministry of Rural Development) could make a decision to subsidize more sustainable production methods rather than conventional monoculture of palm oil and rubber.
- Identification and indication of the boundary of CRBR is important. Once KPLB set a sustainable development policy in CRBR, we can try to provide assistance to the monoculture outside of the boundary while applying other scheme to promote environmentally sustainable development within the boundary.

Record of interview with the Keningau Assistant District Officer

- (1) Date and time: 11:30-12:30, 11 Dec. 2014
- (2) Interviewee
 - Mr. Virus Malitam, Assistant District Officer, Keningau
- (3) Venue
 - Natural Resources Office (after the reporting meeting of the training in Japan)
- (4) Questions: -
 - Update of the socioeconomic and poverty status in Keningau (since the planning of CRBR management in 2011 under BBEC II)
- (5) Facts and comments
 - For accurate population of Keningau district, I need to refer to the statistics.
 - Forestry is another economic activity in Keningau district and there were a number of timber mills operating in the district in 2011. Some mills have been closed since then because of no timber to cut and strict control by SFD.
 - In the transition area, there are rubber and oil palm plantation, but they are mainly joint venture by SLDB (Sabah Land Development Board), FELDA (Federal Land Development Authority) and FELCRA (Federal Land Consolidation and Rehabilitation Authority) rather than those operated by small holders.
 - Most of the villages in CRBR do poaching.
 - The figures of poor households registered in e-Kasih in 2011 should be updated. We have an officer in charge of e-Kasih in Keningau District Office.
 - We have a few more villages applying to Tagal for these three years (6 villages were covered by Tagal programme in 2011).
 - In Keningau, MESEJ projects are in Kg. Bunan (oil palm) in Sook area and Kg. Lumili (oil palm) in Dalit area. Both of them are outside of CRBR.
 - The Micro MESEJ in Bingkor in CRBR targeting to the 9 poor households has been completed.

Record of interview with the secretary of Water Resources Council, Natural Resources Office

- (1) Date and time: 16:00-17:00, 11 Dec. 2014
- (2) Interviewee
 - Mr. Awang Shaminan, the secretary of water resources council, Natural Resources Office
- (3) Venue
 - Natural Resources Office (after the reporting meeting of the training in Japan)
- (4) Questions: -
 - Comments on application of PES for securing water supply service
- (5) Facts and comments
 - We are planning to propose gazetting of the water catchment of Babagon dam as Water Protection Area and Water Conservation Area in Jan. 2015.
 - 78 water catchments have been identified in Sabah, but none of them has been gazetted under Water Resources Enactment. The gazetting of Babagon catchment is a pilot project for gazetting of the catchments.
 - In Jan. 2015, the Water Resources Council will make decision on our proposal of gazetting the catchment. If they approve it based on the ability of Chief Minister, the chairman of the Council, it would be the first Water Protection and Conservation Areas applying the enactment.
 - Establishment of Water Resources Department in in preparation to avoid duplication of authorities and responsibilities among concerning agencies. Water Conservation Areas should be controlled under the Council. At present, DID is acting Director of Water Resources.
 - NRO, the secretary of the Council is under Chief Minister's Department and can control Sabah Forestry Department, Sabah Parks and all the concerning agencies under various ministries, while DID cannot do so as it is under Ministry of Environment, Tourism and Culture.
- (6) Reference collected (as attached): -
 - Presentation slides prepared by the interviewee for reporting of JICA training on Satoyama Initiative he attended, which includes the proposal of gazetting Babagon catchment mentioned above

Record of interview with Papar District Office

- (1) Date and time: 9:00-10:30, 12 Dec. 2014
- (2) Interviewee
 - Mr. William Ahlan, Assistant District Officer (Administration), Papar
- (3) Venue
 - Papar District Office
- (4) Questions: -
 - Update of the socioeconomic and poverty status in Papar (since the planning of CRBR management in 2011 under BBEC II)
 - Comments on introduction of Payment for Ecosystem Services (PES) to CRBR
- (5) Facts and comments

(Update of the socioeconomic and poverty status in Papar)

- Papar District Office doesn't have an officer from SDO (Sabah Development Office) in charge of e-Kasih.
- The MESEJ project nearby Kg. Kinolosodon is completed. 33 houses, electricity, water were completed. Last months I made final inspection. It soon will be transferred to the target people. It is a project to construct a new settlement of 33 houses and to develop rubber plantation for income generation. It is just outside of the boundary of CRP and is surely in CRBR. The site was selected by Assistant District Officer (Development). As the site was too hilly oil palm, rubber was selected for income generation.
- For poverty alleviation, under PPP (Projek Peningkatan Pendapatan) scheme, we assist 10 projects with funding from KKLW (Ministry of Rural and Regional Development, under the federal government).
- For 1Azam scheme, KPD, Department of Agriculture and Fisheries Department channel fund from SDO to poor households. We, District Office coordinate for fair distribution of assistance.
- For PKS (Program Kampung Sejahtera) scheme, we assist planting bananas in Kg. Kayau
- For PPES (localized economic improvement programme) scheme, target is not necessarily the households listed in e-Kasih. A project under the scheme is targeted to a village rather than households. A village prepare a proposal and DO assist it, e.g. a factory of shrimp past (belacan) in Kg. Laut), mushroom farming, etc.
- In Papar we have branch offices of Fisheries Department, Department of Agriculture and KPD. Fisheries Department applies Tagal Programme in Kg. Kinolosodon, Kaiduan, Bolotikon, etc. Department of Agriculture applying 1 Azam scheme for promoting cooking and tailoring. KPD is promoting bee keeping. There is no forest office. They have it in Kimanis.
- Monthly meeting of heads of the concerning departments for coordination of poverty alleviation and rural development is held in District Office. Assemblyman (Yang Berhormat/Y.B.) attends the meeting sometime.

(Information concerning water supply service)

- We have a water intake and water treatment plant in Kg. Kogopan along the KK-Papar old road. It produces 30,000 m³/day of water for Kota Kinabalu.

Record of interview with Sabah Biodiversity Centre

- (1) Date and time: 14:30-16:00, 12 Dec. 2014
- (2) Interviewee
 - Dr. Abdul Fatah Amir, Director, Sabah Biodiversity Centre
 - Mr. George Gaing, Deputy Director, Sabah Biodiversity Centre
 - Mr. Shahrin B. Samsir, Officer, Sabah Biodiversity Centre
- (3) Venue
 - Sabah Biodiversity Centre
- (4) Questions: -
 - A role of SaBC for introduction of PES to Sabah and management of CRBR, current status of ABS in Sabah
- (5) Facts and comments
 - Sabah Biodiversity Enactment will be amended in the first seating of the state assembly in April 2015. The rules and regulations on ABS following the amended Enactment will be tabled and approved by the state cabinet. The change in the Enactment is on the function of Sabah Biodiversity Centre. The bill and rules and regulations are now in Attorney General's Office.
 - We are making much effort for public awareness of a lot of stakeholders. Mainstreaming of biodiversity conservation lacks, then awareness of corporate bodies, estates, government services, non-corporate communities are required. We are also a member of SEEN (Sabah Environmental Education Network). Public Awareness of the local government and plantation owners are also important. We contribute to the training courses for public officers organized by INSAN for mainstreaming biodiversity in the government services. Policy makers and planners are also targeted.
 - Concerning PES for water supply service provided by forest in CRBR, they should also collaborate with UPEN (State Economic Planning Unit). The Director of UPEN is looking forward too see water problem in Sabah will be solved, including the issue on Kaiduan dam.
 - Concerning the coordinator role of SaBC for the management committee of CRBR which was proposed three years ago, we suggested Sabah Biodiversity Council that such organizational arrangement is not efficient. Final decision relies on the Council. Recently, the Council assigned SaBC as a focal point for the State MAB Committee.
 - The Council plans to revise Sabah Biodiversity Strategy recently approved by the Cabinet.

Record of interview with SEDIA

(1) Date and time: 10:00-11:30, 15 Dec. 2014

(2) Interviewee

- Datuk Dr. Mohd. Yaakub Hj Johari, President/Chief Executive, Sabah Economic Development and Investment Authority (SEDIA)
- Ms. Mary Shinto, SEDIA

(3) Venue

- Meeting room, SEDIA

(4) Questions: -

- Classification and strategy for development of the area overlapping with CRBR in Sabah Development Corridor Blueprint

(5) Facts and comments

(Comments on PES)

- We can consider the biodiversity and ecosystem services from CRBR as natural capital for development of the surrounding areas.
- We have project in Kimanis, Papar District to domesticate traditional medicinal plants. We have agro-based industrial facility, gene bank and heritage academy. The village people are acting as custodian of plants from the forest with indigenous knowledge. This approach is a different mode from the agropolitan approach.
- The zoning of the state in Sabah Develop Corridor (SDC) Blueprint only indicates a direction of development in each zone. CRBR is located in between the four zones, Sabah Industrial Zone, Toursim and Highland Agri Zone, Interior Agropolitan Zone and SME Agro-Food Zone, then it will provide essential services for the development of the zones as natural capital.
- Environmental awareness seems prerequisite for introduction of PES. We should be innovative when introducing PES.
- Under SDC, we are planning to assist construction a cable car for tourism development nearby the Inobon substation, homestay programme and establishment of gene bank.
- We are currently developing the plan of the gene bank project together with the university collage in Yayasan Sabah. ITBC, UMS is working with SaBC for information management of the biodiversity and TEK in Sabah but they are very slow. SEDIA has developed the an Herbal Medicine Knowledge Base (HMKB) applying semantic technology with funding from MOSTI. SaBC has been looking at the project for opportunity of their assistance.
- Pilot project of PES for water supply service of the Babagon watershed is appropriate. You can also consider collection of payment for watershed conservation through electricity bill.
- Kenyir dam in Terengganu is a multipurpose hydroelectric power and flood mitigation scheme constructed in 1985. They now recognize the value of the forest in its catchment for the dam.

Record of field visit to Tudan

- (1) Date and time: 12:30-14:30, 15 Dec. 2014
- (2) Respondent and companion during the field visit
 - Mr. Moris Gayu, Vice-chairman, JKKK, Kg. Tudan
 - Ms. Jocelyn Maluda, ERE Consulting
- (3) Sites observed
 - Kg. Tudan
 - Vegetable farm with the hillside farming techniques in the village
 - Sites of beekeeping in the village
 - Site for compost making in the village
- (4) Objectives: -
 - Observation of the pilot activities for management of CRBR in the village
 - To learn lessons for application of PES and other economic incentives in CRBR
- (5) Facts
 - Kg. Tudan was selected as a pilot site applying the selection criteria determined under SDBEC (as shown in Appendix). the village was considered as more appropriate as a pilot site than other villages in lower altitude.
 - Kg. Tudan is located above 1,100m amsl. Rubber can still grow in this altitude but is not productive in this altitude. Palm oil plantation is not applicable here for the altitude and also the steep slope.
 - Before the project, there was minimal assistance from the government for improvement of livelihood. Tagal programme by Fisheries Department is not applied as they only have narrow streams.
 - For the beekeeping practiced in the village, they have been using box type wooden beehives for long time. They claimed they developed the design of the beehives. The villagers make beehives by themselves using timber. Bees are very sensitive for smoke and chemicals then the beehives should be located away from the houses. Under the project, Department of Agriculture introduced a “modern” design of beehives with some compartments in a box, but they didn’t work well for beekeeping here. In addition, it is easier to make their conventional beehives, then the villagers decided to keep using them. Department of Agriculture also provided training on beekeeping. It was not very new for the villagers, but it provided reference to the villagers they can compare their conventional method with.
 - The respondent applies the hillside farming technology in his vegetable garden. He uses only manual labor without machinery. He plant bamboo around the garden for soil conservation.
 - In the garden owned by chairman of JKKK, they make compost. The respondent (vice-chair) is the leader of the compost making. He compares growth of crops in three types of field, 1) without any inputs, 2) with chicken manure, and 3) with the compost prepared under the project.
 - There are some families in the village whose children are getting some financial assistance from the Welfare Department, following their registration as poor households in e-Kasih. They could submit forms to Tuaran District Office for registration.
 - Under the pilot project, Participatory 3D Modeling of the village and surrounding area is also implemented.
- (6) Reference collected (as attached)
 - Selection criteria of pilot site for CRBR management under SDBEC

1-5 To pilot livelihood improvement for community-based conservation through agriculture improvement, sustainable land use, ecotourism and private business participation in marketing in collaborations with local government units, NGOs and concerned agencies

To prepare detailed activity plan

To select 1 village as a pilot sites

(Selection Criteria of Pilot Sites)

Japanese side and Malaysian side agreed as follows.

- ✧ Existence of threatened importance biodiversity / wildlife;
- ✧ High potential for livelihood improvement;
- ✧ Willingness to participate in the Project among local stakeholders and adequate local governments' commitments;
- ✧ Relatively easy access and high display potential as a model; and
- ✧ No similar major projects in the area.

Record of interview with Department of Agriculture

- (1) Date and time: 9:00-10:30, 16 Dec. 2014
- (2) Respondent
 - Datin Elizabeth Malangkig, Assistant Director (Research), Department of Agriculture (012-8285538)
- (3) Venue
 - The office of the respondent, DoA
- (4) Questions: -
 - Progress of the pilot project in Kg. Tudang and status of rural development in CRBR
 - View on the proposal introduction of PES and other economic incentives for conservation in CRBR
- (5) Facts and comments

(Tudang and rural development in CRBR)

- ERE is a contractor for the study in Kg. Tudan as pilot site under SDBEC.
- DoA is looking at the guideline for agricultural development. unsuitable land for agriculture. The land to be alienated for agricultural purpose should fulfill the conditions stipulated in the guideline. Land with conditions inappropriate for agricultural development, such as shallow soil, steep slope are classified by DoA as non agriculture land following our criteria,.
- Any land application for agricultural use is commented by Datin Elizabeth, DoA before decision is made by LSD.
- Kg. Tudan, because of its steep slope and shallow soil, is considered as non-agricultural land. However they still have to live there. Then we assist their beekeeping and vegetable farm.
- According to our guideline, rubber plantation is applicable up to 600m amsl. Oil palm is up to 300m amsl. Though in Keningau they plant the crops above 700m amsl, we don't recommend to plant above the limit. Even if less production on the high elevation is compensated by the inflated prices of rubber or oil palm fruit bunch bear at the moment, there is a risk of drop in prices in future. Opportunity cost of such development should be considered too. LIGS does not recommend plantation above the limit either.
- In Sabah, consumers don't want to pay more for organic products. However, if farmers can produce organic fertilizer and the cost and price of the organic products is same as ordinary products, the consumers choose the organic products.
- Physical input we can provide to the farmers in Tudan is very minimal. For modern agriculture in lower elevation, we could provide high yielding paddy rice variety, but Kg. Tudan is hilly and they cannot have rice paddy there.
- Thus we provide training, fruit tree seedlings, etc. We have so-called 2L (*Lawatan dan Latihan/* visit and training) programme by DoA. Kg. Tudan is covered by the programme.
- They form farmers group, then give them extension service, introduction of GAP (Good Agriculture Practices).
- Kg. Tudan is under Tuaran district. Before the study under SDBEC, there was no assistance by the government for agricultural development in Kg. Tudan.
- Kg. Tudan was selected as a pilot site because it is in a critical area on higher elevation. Methodology and technology we develop and examine in Kg. Tudan could be applicable to lower elevation.

(Comments on introduction of PES and other economic incentives)

- Oil palm and rubber has been economically more profitable than the other crops though rubber price recently dropped.
- Our question for the management of CBBR is how we can promote people not to choose monoculture of oil palm and rubber.

- We have guidelines for oil palm and rubber plantation which includes control of environmental impact. The Transition Area of CRBR in Beaufort district has been opened for oil palm. what we can do is just to make sure their operation properly comply the guideline. They may need to replant oil palms in next 10 years. there is guideline for replanting also. The plantations in Beaufort Maybe owned by small farmers.
- Development of oil palm plantation and rubber plantation by small farmers is heavily subsidized. MPOA has a scheme to provide financial assistance of RM9,000 per hectare for new plantation and replantation of oil palms up to 5ha, which is called TBSPK (*Skim Tanam Baru Sawit Pekebun kecil/ New Planting Scheme for Palm Smallholders*). MPOA targets to apply the scheme to 8,000 ha in total in Sabah. In Sabah issuance of land title is a n essential condition for MPOA to approve application of TBSPK.
- LIGS may also give similar subsidy for rubber plantation also, which covers cost of seedlings, land preparation and plantation.
- Sabah Electricity Sdn. Bhd. (SESB) charges “Renewable Energy Fund” (*Kumpulan Wang Tenaga Boleh Baharu Penggenapan*) to each customer to promote the use of renewable energy.
- Branding of CRBR product is another feasible approach for economic incentive. Product from CRBR can be also branded by Heart of Borneo Programme. Immediate market of such product is the tourists visiting Sabah.

Record of interview with Environmental Protection Department

- (1) Date and time: 14:30-16:00, 16 Dec. 2014
- (2) Interviewee
 - Ms. Daisy Aloysius, Head of Development Sector, EPD
 - Mr. Ray Marvin Tann, Development Sector, EPD
- (3) Venue
 - EPD
- (4) Questions: -
 - Application of EIA to achieve sustainable development in CRBR
 - Comments on introduction of PES and other economic incentives
 - Environmental education as a tool of river basin management and PES
- (5) Facts and comments

(EIA to achieve sustainable development in CRBR)

- At present MONRE is in process of formulating a national policy on PES.
- In the process of land development, EPD is involved.
- Eliminating monoculture from CRBR by regulating the subsidies to oil palm and rubber plantation is not possible, as the land owners have been spoiled (*manja*) by such subsidies. Total ban of subsidies is difficult. We can still achieve the land use of CRBR with conservation, partial monoculture, agroforestry with legumes, etc.
- Our enactment stipulating EIA cut across lands no matter what the title is.
- Environment Protection Enactment 2002 stipulates application of EIA to actions potentially degrading the values of environment. Section 13 of the Enactment states “the Director may require an environmental impact assessment report or a proposal for mitigation measures to be submitted by an applicant for any activity not prescribed under section 12 subsection (1) if the Director is of the opinion that such development activity has or is likely to have an adverse effect on the environment.” And Section 14 states “Any governmental authority shall immediately notify the Director in writing, if a development activity under their jurisdiction is included in the list of prescribed development activities or if the governmental authority is of the opinion that an environmental impact assessment report or a proposal for mitigation measures is required.” Sabah Parks could be the one who notify us any problematic activities in CRBR following Section 14.
- Because of lack of man power (14 staff members in EPD), we cannot always watch all development in Sabah by ourselves. We have only two offices in the state, one in KK and the other is in Sandakan.
- KPLB has own respective law on earthwork regulation. So does Ministry of local government and housing. Following the laws, any Development Plans must be approved by district authority before implementation. When Development Plan comes in the district authority, EPD also comes in to apply the EIA procedure.
- We have a lot of rock reserves for quarries (and even coal) in CRBR identified by Mineral and Geoscience Department Malaysia. For your reference, even Bukit Kukusan Forest Reserve has a quarry. Occupation Permit was issued by Sabah Forestry Department. As the vegetation there is not a forest, shrub on rock, they determined that it is more valuable for its rock resources.
- In the process of approval of development of a quarry, usually three conditions are applied, such as 1) survey plan, 2) geological survey approved by Mineral and Geoscience Department Malaysia, and 3) EIA report approved by EPD.

(PES and other economic incentives)

- No Net Loss policy, offsetting damage by quarry by rehabilitating degraded ecosystem in other areas in CRBR would be effective. Sabah Forestry Department is pushing this idea in their Forest Reserves. Such No Net Loss policy could be applicable not only quarry development but also other damaging

industries in CRBR such as oil palm plantation.

(Environmental education)

- As a secretariat of Sabah Environmental Education Network (SEEN), we can contribute to awareness raising of CRBR and can report back to UNESCO on the two issues of CRBR, enforcement of EIA and environmental education. We can utilize results of monitoring of SEEP (Sabah Environmental Education Policy) for such reporting.

Record of interview with Department of Fisheries

- (1) Date and time: 9:00-10:00, 17 Dec. 2014
- (2) Respondent
 - Dr. Norasma Dacho, Section Head, Conservation and Environment Section, Department of Fisheries
- (3) Venue
 - SDBEC Office, NRO
- (4) Questions: -
 - Status of Tagal programme and feasibility of PES utilizing it
- (5) Facts and comments
 - Mr. Jephrein Wong, former Deputy Director (Marine) who had been in charge of Tagal program has retired.
 - The community nearby Babagon dam is famous for its application of Tagal. They are one of the beginners of the Tagal programme. The communities in Tuaran are also the beginners.
 - I will provide more information later answering your questions. Mr. Godfrey Kiskey is now in charge of Tagal programme in the department (Ms. Joanna Kitingan married to him, godfrey.kiskey@sabah.gov.my)
- (6) Reference collected (as attached): -
 - Updated numbers of villages and rivers covered by the Tagal programme
 - Brochure of the Tagal programme

SISTEM TAGAL

Sistem Tagal adalah satu system perkongsian pintar di antara masyarakat tempatan dengan Jabatan Perikanan Sabah untuk memastikan sumber perikanan sungai di Sabah berjaya dilindungi, dipulihara dan dituai secara mapan.

Sehingga bulan September 2014, bilangan Sistem Tagal di negeri Sabah adalah sejumlah 531 melibatkan sebanyak 20 daerah secara keseluruhan dan 221 batang sungai.

BIL.	DAERAH	BILANGAN TAGAL (KAMPUNG)	BILANGAN SUNGAI TERLIBAT
1	Ranau	99	33
2	Tambunan	86	38
3	Tuaran	76	21
4	Kota Belud	48	31
5	Papar	36	5
8	Kota Marudu	30	10
7	Sook	28	14
6	Penampang	28	11
13	Sipitang	18	4
10	Nabawan	17	10
11	Pensiangan & Pagalungan	7	6
12	Tenom	16	7
9	Keningau	13	8
14	Tongod	10	8
15	Telupid	7	5
16	Beaufort	7	6
18	Kota Kinabalu	2	1
17	Beluran	1	1
19	Kuala Penyu	1	1
20	Putatan	1	1
21	Kinabatangan	-	-
JUMLAH		531 Kampung	221 Sungai

OBJECTIVE OF THE TAGAL SYSTEM

1. To promote co-operation amongst local communities with Department of Fisheries Sabah towards ensuring the sustainability of river resources.
2. To protect and conserve the river environment including the river ecosystem and fish habitats.
3. To protect and conserve depleted river resources.
4. To increase fish production, as one of the source of protein for rural communities.
5. To develop alternative sustainable livelihood for local communities by promoting ecotourism and sport fishing.

ROLE OF COMMUNITIES AND DOFS IN THE DEVELOPMENT OF THE TAGAL SYSTEM

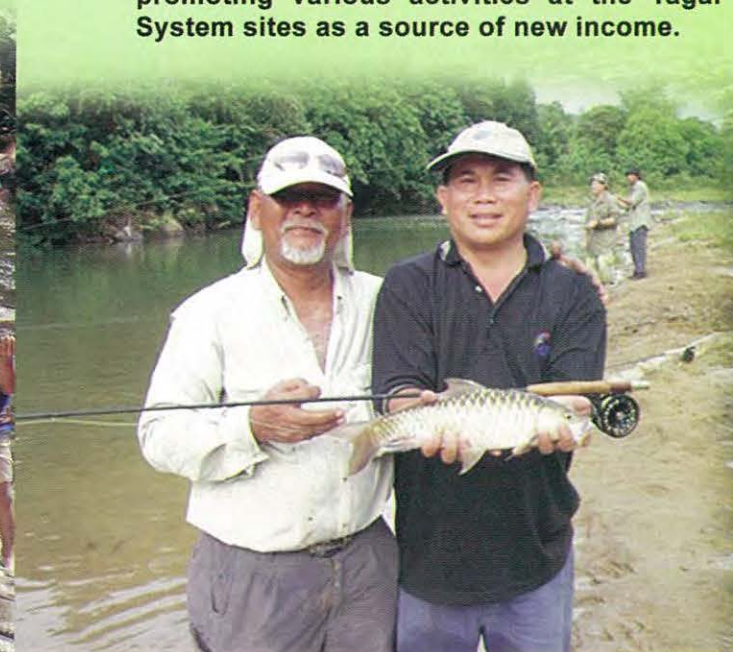
Communities

1. Establish a tagal Committee at the respective village.
2. Protect and manage the river ecosystem and the river resource at the respective Tagal zone.
3. Harvest of fish in a sustainable manner:

RED ZONE	Cannot be harvested
YELLOW ZONE	2-3 times/year
GREEN ZONE	All year round
4. Work closely with Department of Fisheries Sabah in managing the Tagal System in the respective village.

Role Of Department Of Fisheries Sabah

1. Technical advisor for all Tagal committee.
2. Developed a Tagal model in Babagon, Penampang in 2002.
3. Promote the Tagal System to other districts.
4. Monitor the development of Tagal system in Sabah.
5. Enhance the current Tagal System through continuous research and development.
6. Build and enhance capacity of all Tagal Communities to effectively manage the Tagal System.
7. Encourage the establishment of Tagal System by providing support technically and financially.
8. Encourage the establishment of Tagal by promoting various activities at the Tagal System sites as a source of new income.



VISION OF THE TAGAL SYSTEM SABAH CONTEXT

CURRENT TAGAL

FUTURE TAGAL

Environmental Friendly / Pro-Environment / Successful & sustainable / Non-commercial

Environmental Friendly / Successful & sustainable / commercial

Sport Fishing (Catch & Release)

Homestay

Fish feeding venture / fish massage

Commercial activity

Department Of Fisheries Sabah
Wisma Pertanian Sabah,
Aras 4, Blok B, Jalan Tasik Luyang,
(Off Jalan Maktab Gaya)
88624 KOTA KINABALU, SABAH
No. Tel : 088-235966 Ext 117
No. Fax : 088-250321

<http://www.flshdept.sabah.gov.my>

IMPACT OF THE TAGAL SYSTEM IN SABAH

1. Degraded river ecosystem successfully revived.
2. Depleted river resources and fish extinction, successfully revived.
3. Improvement in fish landing.
4. Potential alternative livelihood for the local communities (Swim with the fish, fish massage, fish feeding venture).

STATUS OF TAGAL SYSTEM IN SABAH
(01HB MARCH 2012)

NO	DISTRICT	NO. OF TAGAL (VILLAGE)	NO. OF RIVERS INVOLVED
1	Ranau	85	33
2	Tambunan	76	32
3	Tuaran	73	19
4	Kota Belud	45	31
5	Papar	31	4
6	Kota Marudu	26	10
7	Sook	25	14
8	Penampang	24	11
9	Keningau	14	8
10	Nabawan	15	10
11	Tenom	12	3
12	Sipitang	5	4
13	Tongod	4	4
14	Pensiangan	3	3
15	Telupid	2	2
16	Beaufort	2	3
17	Beluran	1	1
18	Kota Kinabalu	1	1
Total		444	193



ACHIEVEMENT

SABAH FISHERIES DEVELOPMENT

CONSERVATION OF SABAH RIVER RESOURCE THROUGH CO-MANAGEMENT (TAGAL SYSTEM)

Introduction

The Tagal System is a smart partnership between local communities and government agency Department of Fisheries Sabah (DOFS) to protect, conserve & manage the river resources in Sabah.



Record of interview with Department of Irrigation and Drainage

- (1) Date and time: 14:00-15:30:00, 22 Dec. 2014
- (2) Respondent
 - Yap Siew , Senior Assistant Director, Department of Irrigation and Drainage
- (3) Venue
 - Headquarters, DID
- (4) Questions: -
 - Feasibility of PES through water supply service in CRBR
 - In particular, introduction of PES to the pilot project lead by NRO to gazette Babagon dam catchment
- (5) Facts and comments
 - I am doubting if amount of money collected from service users including those who are using a part of water in a river, can cover all the cost of conservation of the watershed by the service providers including the various government agencies.
 - I still can support site specific PES introduction to the Babagon dam catchment, as the population of service providers (300 plus land owners in the catchment) is relatively small in comparison with the service users (less than half of 500,000, the population in Kota Kinabalu).
 - Concerning the pilot project for Babagon dam catchment, the option to buy back the land and relocation of villagers in the catchment is impossible.
 - DID has been preparing proposal of gazetting the Babagon catchment. We already studied and have a plan to control activities in the catchment. NRO is boosting the process of gazetting relying on information we provided.
 - Introduction PES can be used for negotiation with the landowners for gazetting. We cannot simply declare Water Catchment/Conservation Areas on gazette without their consents.
 - Furthermore, regulatory measures (detailed conditions for land use in the alienated land in Water Conservation Area according to the enactment) must be applied together with PES. It will take time to prepare regulations on land uses in Water Conservation Area, like we did in the Community Use Zone in Crocker Range Park under BBEC, regulations should be determined through discussion with the landowners and documented. Each of different land uses and crops we need to prepare such regulations, then it will take time.
 - We can refer to the agreement process and institution for CUZ in CRP and CCA in Eco-Linc
 - Director of DID was officially assigned as Director of Water Resources in black and white by Chief Minister. Thus he is officially Director of Water Resources, not an “acting” Director as someone considers based on speculation.

**添付資料 2: 関係諸機関への調査結果報告会(2014年12月
18日)の議事録**

Minutes of the Reporting Meeting of the Study on Payment for Ecosystem Services (PES) for SDBEC

(1) Date and time: 14:30-14:30, 18 Dec. 2014

(2) Venue

- NRO Meeting Room, Menara Tun Mustapha

(3) Participants

1. Mr. Gerald Jetony, NRO (Chairman)
2. Mr. Kazunobu Suzuki, JICA-SDBEC
3. Mr. Awang Shaminan, NRO
4. Mr. Lim Lam Beng, Water Department
5. Dr. Norasma Dacho, Department of Fisheries
6. Mr. Anthony Tinggi, Sabah Parks
7. Mr. Mohad. Sofian Alfian, Tuaran District Office
8. Mr. Meurel D. M., SEDIA
9. Mr. Humphrey Ginibun, Sabah Tourism Board
10. Mr. Thomas Logijin, Tambunan District Office
11. Md. Guntor Arif, Keningau District Office
12. Ms. Prica Thomas, Department of Irrigation and Drainage
13. Mr. Ray Marvin Tann, Environmental Protection Department
14. Mr. George Gaing, Sabah Biodiversity Centre
15. Mr. Roslan Abdillah, Sabah Forestry Department
16. Mr. Mohd. Amzari Mohd. Yusof, Sabah Forestry Department
17. Dr. Bakhtiar Yahiya, Institute for Tropical Biology and Conservation, UMS
18. Mr. Sadli Madarin, Kota Kinabalu City Hall
19. Mr. Mohd. Nor, Kota Kinabalu City Hall
20. Mr. Ryotaro Takano, JICA-SDBEC
21. Ms. Alessandra Markos, JICA-SDBEC
22. Dr. Jiro Iguchi, Consultant JICA-SDBEC

(4) Minutes

The meeting started approximately at 9:00 am with the opening remarks by the Chairman. He welcomed all the meeting participants and briefly explained the purpose of the meeting as well as the meeting agendas.

1. Reporting of the survey result including recommendations on PES by Dr. Jiro Iguchi, the JICA Consultant

- 1.1 Dr. Iguchi, a consultant for JICA-SDBEC gave 1 hour presentation of his findings and recommendations on PES and other economic incentives for river basin management of CRBR for SDBEC. The presentation slides are as attached.

2. Discussion on the findings and recommendations

- 2.1 Mr. Jetony, the chairman commented that CRBR has not much value for tourism but it is very important as a water tank.
- 2.2 Mr. Beng, Water Department informed that Babagon dam is one of the sources of water supply in Kota Kinabalu, which is providing less than a half of the total water supply to KK. They don't utilize all the water flow from the Babagon catchment, discharging 10,000m³ to the river. He informed that they needs more water and commented that as a user of the river, the Department has to pay for the usage.
- 2.3 Mr. Beng, Water Department commented that Section 45.(2)(f) of Park Enactment, "to levy fees or to collect dues from persons utilizing the accommodations, amenities, facilities or services provided under this Enactment;" is not applicable to the water supply service. Water Resources Department can only charge the water supply service.
- 2.4 The chairman commented that economic incentive provided to the landowners of the catchment areas through PES could be a tool for convincing villagers for conservation.
- 2.5 The chairman commented that conservation of Babagon dam catchment can affect issues of flood in Penampang and Kota Kinabalu. Mr. Beng, Water Department informed that the

cause of the flooding is not caused by current land use of the catchment.

- 2.6 Mr. Beng, Water Department supports the recommendation on introduction of PES for conservation of Babagon dam catchment by the consultant. He also commented that CRP feeds water to Tuaran, Kota Belud and other towns.
- 2.7 Mr. Logjijn, District Officer of Tambunan commented the concept proposed by the consultant is ideal to give the villagers an economic incentive to conserve forest. He also commented that in Tambunan also MPOB and LIGS provides everything to villager to start plantation, and it would related to the current political situation in Sabah as the “fix deposit” to the ruling party.
- 2.8 The chairman discussed mainstreaming the proposed ideas in a state policy which will be formulated under the UNDP-GEF project.
- 2.9 Mr. Shaminan, NRO informed that they are trying to gazette the Babagon dam catchment hopefully by Jan. 2015 as a pilot project.
- 2.10 The chairman commented that they can apply the PES concept to the tourism and Tagal programme also. The service users downstream should consider to pay.
- 2.11 Mr. Beng, Water Department commented definition of what you are trying to do or conserve (land use) in the watershed is important. He added that the Federal government always tends to think about oil palm and rubber plantation and they hardly know how to utilize ecosystem service as it is.
- 2.12 Mr. Liew, Lands and Surveys Department and Mr. Beng, Water Department confirmed that Water Conservation Area gazetted under Water Resources Enactment still can be alienated, while regulation can be applied even after alianation.
- 2.13 Mr. Tann, Environmental Protection Department commented the study is comprehensive. However, he pointed out estimation of amount to pay (economic valuation of the ecosystem service) is missing.
- 2.14 The chairman commented that they don’t limit discussion of PES to a certain service, and discussion on PES and REDD+ should be integrated.
- 2.15 Mr. Ginibun, Sabah Tourism Board informed Melaka state government imposes RM2/room-night as heritage tax to all hotels in the state as state regulation. In Sabah, KITA (Kinabatangan Tourism Association) voluntarily collect RM10/tourist for conservation of the area. They explain the tourists the purpose of the conservation fee and they are happy to pay, in particular Japanese tourists.
- 2.16 The chairman added that the service tax collected from the tourists goes to the federal treasury, while state could handle conservation charge for its own conservation effort.
- 2.17 Mr. Liew, Lands and Surveys Department requested to distribute all the participants of the meeting a paper on the study results. He also discussed there are two options for payment for ecosystems services between service providers and service users, such as 1) transaction among government agencies, and 2) direct transaction between providers and users.
- 2.18 Concerning economic valuation of ecosystem services, Mr. Liew, Lands and Surveys Department commented that every piece of land is unique and valuation requires consideration of the uniqueness. Such valuation must be done by a competent agency.
- 2.19 Mr. Liew, Lands and Surveys Department also commented that users’ willingness to pay would be different for each situation. Tourists are willing to pay the conservation fees, while some water supply users would not be happy additional conservation charge to water bill.
- 2.20 Mr. Beng, Water Department responded to Mr. Liew that they could apply transaction between a government agency to another agency. Water Department can pay to Water Resources Department for the watershed service, once fund is allocated every year to run the mechanism.

Payment for Ecosystem Services (PES) for SDBEC

Its application to management of CRBR
18 Dec. 2014
Jiro Iguchi, Consultant for SDBEC

1

Topics

- ④ Status and management of the Buffer Zone and Transition Area of CRBR
- ④ What is PES?
- ④ PES and economic incentives for biodiversity conservation in Sabah
- ④ Proposal of PES and other economic incentives for CRBR

2

Status of the Buffer Zone and Transition Area of CRBR

3

Objectives of the management of CRBR (draft)

- ④ Core Objective: To protect biodiversity, ecosystem and cultural diversity including genetic diversity.
- ④ Means to achieve the Core Objective
 1. To improve ecosystem conservation in the Core Area
 2. To promote sustainable community livelihood in the Buffer Zone and Transition Area
 3. To promote research and education in CRBR

4

JKKK in CRBR

District	Number of villages
Penampang	44
Papar	73
Beaufort	24
Tenom	29
Keningau	92
Tambunan	57
Ranau	2
Tuaran	61
Kota Kinabalu	17
Total	399



5

POPULATIONS OF THE 8 DISTRICTS AND KOTA KINABALU

Administrative areas	Area (km ²)		Population	
	CRBR (% in the area of the district/city)	Total area of District/City	CRBR	Total population in the district (2010)
Penampang	466	466	16,162 (10.1%)	159,600
Papar	1,243	1,243	22,320 (20.0%)	111,400
Beaufort	1,735	1,735	2,053 (2.8%)	74,600
Tenom	2,409	2,409	4,645 (8.5%)	54,400
Keningau	3,533	3,533	28,404 (14.5%)	195,700
Tambunan	1,347	1,347	17,571 (51.7%)	34,000
Ranau	2,978	2,978	767 (0.9%)	88,800
Tuaran	1,166	1,166	7,179 (7.3%)	97,800
Subtotal of 8 Districts	14,877	14,877	99,101 (12.1%)	818,600
Kota Kinabalu	350	350		447,200
Total	3,505.78 (23%)	15,227	99,101 (7.9%)	1,254,700

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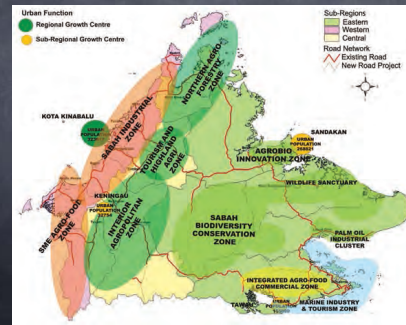
STATUS OF POVERTY IN CRBR

DISTRICT	PENAMPANG	PAPAR	BEAUFORT	TENOM	KENINGAU	TAMUNAN	RANAU	TUARAN	KOTAKINABALU	TOTAL
Number of e-Kasih Registered households										
- biddapee poor	34	22	1	15	73	148	0	1	2	296
- poor	159	162	8	82	195	365	0	46	0	975
- moderately poor	90	181	9	55	52	199	0	34	4	624
Total	283	365	18	152	280	712	0	81	6	1,853
Ratio in the all households in CRBR	8.8%	8.2%	3.9%	16.4%	4.9%	20.3%	0.0%	5.6%	0.0%	9.6%

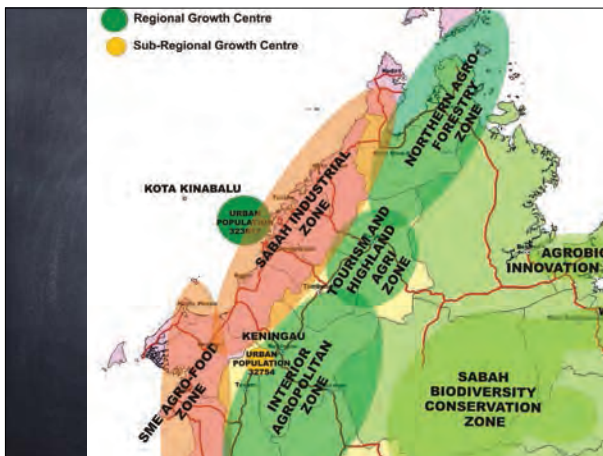
Source: Sabah Development Office, Department of Statistics Malaysia, Sabah (2009)

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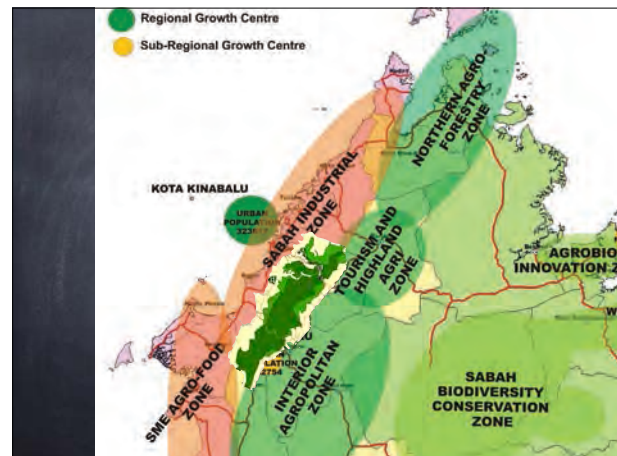
Sabah Development Corridor Blueprint



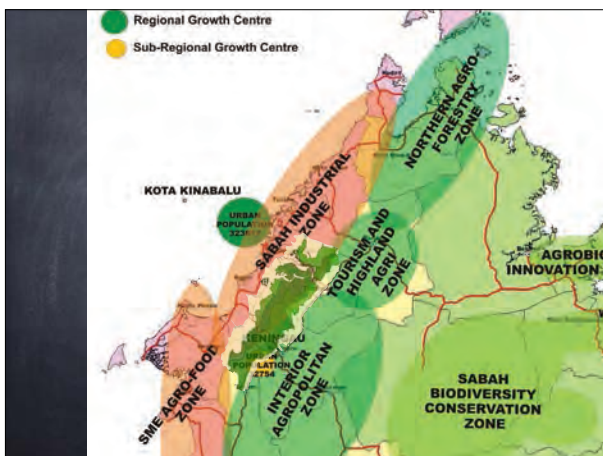
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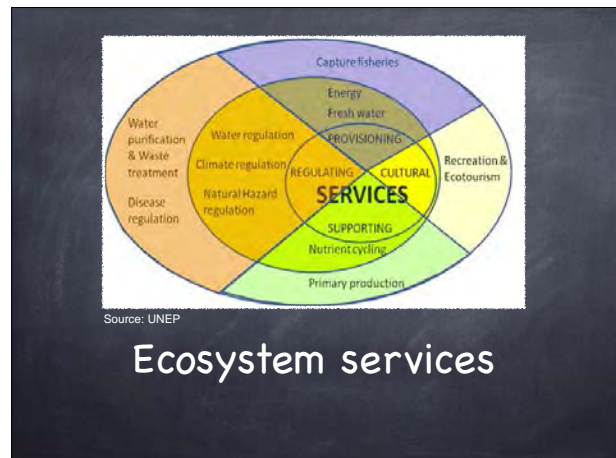
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What is PES (Payment for Ecosystem Service)

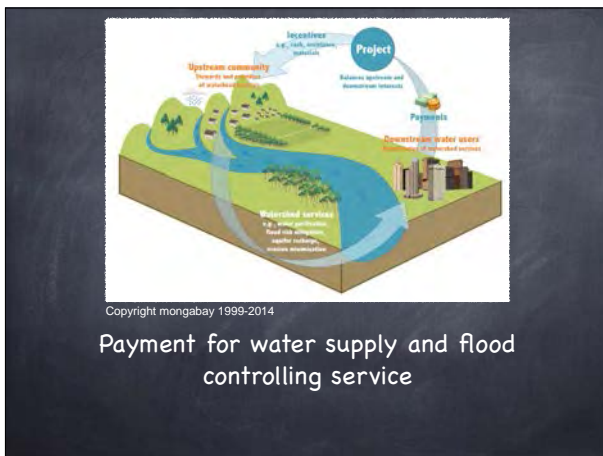
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- ⦿ A voluntary transaction where
- ⦿ a well-defined ecosystem service
- ⦿ is being "bought" by a ecosystem service buyer
- ⦿ from a ecosystem service provider
- ⦿ if the ecosystem service provider secure provision of the service

10



11



Payment for water supply and flood controlling service

12

- ### PES at the national level
- ⦿ National Policy on Biological Diversity revised by 2015 with assistance of UNDP-GEF to meet national priorities and the Aichi targets.
 - ⦿ In preparation of the revised NBSAP, identification of potential means of capturing the ecosystem services including through policies such as payments for ecosystem services and other positive incentives.
 - ⦿ Early stage of exploring these mechanisms: the UNDP supported scoping study on PES (2012) that look into potential ecosystem services and its users (key sectors).

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- ### At national level
- ⦿ PES is not explicitly incorporated in the laws of Malaysia, however, certain elements of PES do exist in a number of laws.
 - ⦿ Many economic valuation studies but few has been applied to PES mechanism.
 - ⦿ Economic valuation on marine ecosystems is less than that of terrestrial ecosystems.

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PES and other financial mechanism at the state level

15

Biodiversity Conservation in Multiple-use Forest Landscapes in Sabah, Malaysia (the UNDP GEF Project)

- No.4 of 9 subcontracts: Development of state-level policy options, and pilot landscape level demonstration of, PES (scheduled for 4 years from Oct. 2015)

16

Bio-carbon funding including REDD + (Tradable permit and offset):

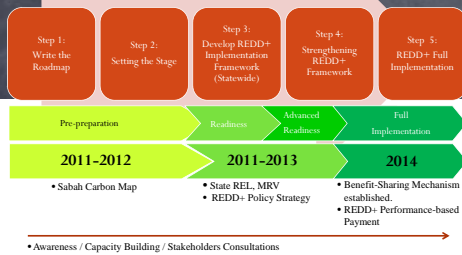
- Many related initiatives since 1990s lead by SFD
- Sabah's Roadmap on REDD+
- Ongoing EU REDD+ Project

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Sabah REDD+ Roadmap

Strategy: Sub-national / nested approach

The milestones:



Source: Sabah Forestry Dept. (2012)

18

PES through tourism

- Entry fees to the protected areas
- The number of visitors to the Crocker Range Park (Headquarters Stations and substations) totalled 20,156 in 2010.
- KITA (Kinabatangan Tour Operators Association) applies voluntary conservation levy.

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Summary of Visitor Arrivals To Sabah Places of Interest		
No. Places of Interest	2012	2013
1 Tunku Abdul Rahman Park	398,870	527,017
2 Kinabalu Park	285,466	332,838
(Daily, Overnight & Climbers)		
3 Mount Kinabalu Climbers	53,882	55,373
4 Poring Hot Springs	347,217	363,288
5 Turtle Islands Park	11,418	10,107
6 Tawau Hills Park	99,149	82,848
7 Pulau Tiga Park	4,487	12,800
8 Sabah Agriculture Park	23,306	20,983
9 K K City Bird Sanctuary	4,783	NA
10 Gomantong Cave	13,618	13,947
11 Sepilok Orang Utan Sanctuary	108,880	104,349
12 Lok Kawi Wildlife Park	136,061	125,798
13 Tabin Wildlife Reserve	2,060	1,731
14 Sukau, Kinabatangan	7,325	4,761

Source - Sabah Parks / Wildlife Department / Jabatan Perhutanan Daerah Tambunan / Sabah Agriculture Park/KK City Bird Sanctuary/

20

Water supply service

- To evaluate the ecosystem service of CRP, Sabah Parks estimated volume of water flowing out from CRP and reported it at the state cabinet in 2013.

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Access and Benefit Sharing (ABS)

- Revised Sabah Biodiversity Enactment and its Rules and Regulation are in preparation

22

RSPO and palm oil certifications

- Value added green markets
- RSPO, MSPO

23

Other innovative financial mechanisms (mainly lead by SFD)

- Forest Certification
- Malua biobank
- PES Study by SFD: proposal of PES as licence condition
- Biodiversity offsets/ no net loss

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Proposal of PES and other economic incentives for CRBR

25

Identified ecosystem services provided by CRBR

- Water supply (regular flow and quality)
- Flood control, disaster control
- Carbon sequestration
- Recreation (landscape, rare species, etc.)
- Genetic resources

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Land use securing the ecosystem services

- Conservation of the forest
- Reforestation and enrichment planting
- Traditional shifting cultivation with a sufficient fallow period
- Wet paddy
- Tagal
- Alternative livelihood with ecosystem services maintained

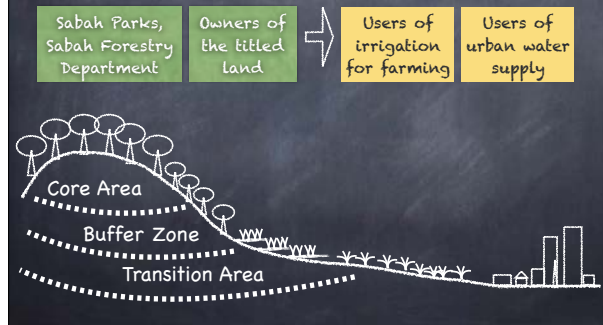
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Ecosystem service: water resource and flood control

- Regular and clean water supply
- Flood control, regulating landslide
- Controlling siltation and salinity for coral and other marine ecosystems (?)

28

Payment for Watershed Protection



29

Payment for Watershed Protection: Legal Basis (Sabah Water Resources Enactment)

- Water Protection Area: No land shall thereafter be alienated, no person shall be authorised to erect a new structure, establish a new plantation or clear land.
- Water Conservation Area: The Water Resource Dept. may notify the owner or occupier of the land that specified types of activities are prohibited, or to be undertaken in a specified manner or in specified locations or prohibited.

30

Status of Water Protection/Conservation Area in Sabah

- No Water Protection/Conservation Area has ever gazetted.
- The Buffer Zone of CRBR followed the proposed Water Protection/Conservation Areas by DID.
- The Water Protection Area should not be alienated.

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Payment for Watershed Protection: Legal Basis (Sabah Water Resources Enactment)

The Director may levy water management fees and charges representing the cost of management activity on a person—

- holding a licence issued under Part IV;
- who owns or occupies land within a declared floodplain area;
- who is benefitted by a water protection area; and
- where the Minister has authorised such charges, a person who owns or occupies land within a water conservation area.

32

Payment for Watershed Protection: Legal Basis

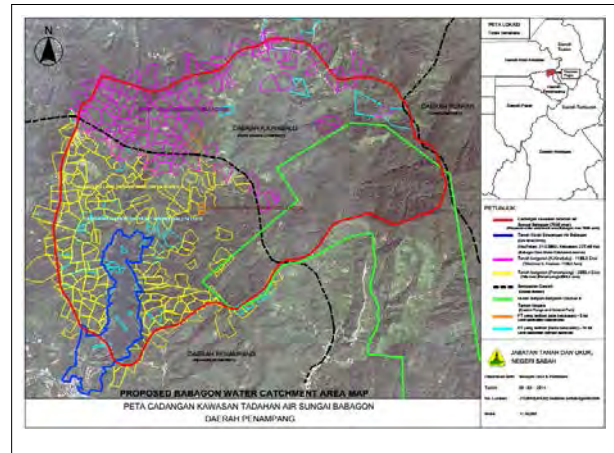
- Sabah Park Enactment: -
- 42.(2)
- (f) to levy fees or to collect dues from persons utilizing the accommodations, amenities, facilities or services provided under this Enactment;

33

Proposed Pilot Project: Payment for Watershed Protection of Babagon dam

- ⦿ Currently the Secretariat of Water Resources is discussing gazettement of water catchment area of Babagon dam (Action Plan was prepared as a result of JICA training Oct-Nov. 2014).
- ⦿ PES would facilitate consent of landowners and other stakeholders on the gazettement.
- ⦿ Gazetting of the Baboon Watershed could be a model for the other water protection/conservation areas

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Summary of Land Status in Proposed Water Catchment Area at Babagon Moyog

1. Proposed Area Acreage : 3,114 ha (7,695 acre)
2. Number of land owner : 322
3. Total area of alienated land : 1,324 ha (3,271.7 acre)
4. Acreage of Dam Area : 155 ha (384 acre)
5. Area of the Forest Reserve : 705 ha (1,741 acre)
6. Approximate state land : 930 ha (2,300 acre)
7. Total number of land applications: 79 (5 approved) No title yet

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Facts of the Babagon watershed

- ⦿ The whole watershed of the Babagon dam is included in CRBR
- ⦿ Part of the watershed is in the Core Area (Crocker Range Forest Reserve, not CRP), while the rest is in the Transition Area.
- ⦿ According to the coordinate of the villages identified under BBEC II, the watershed may includes 4 villages with JKKK such as Kg. Kapur, Kg. Kintok, Kg. Tampasak and Kg. Kalasunan

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Facts of Babagon dam watershed (continued)

- ⦿ Sizeable land in the watershed except the Crocker Range Forest Reserve is already alienated (GIS data published by lands and surveys Dept.).
- ⦿ Babagon dam is main source of water supply in Kota Kinabalu.
- ⦿ Babagon dam is managed by JETAMA Sdn Bhd, the concessionaire by Water Dept.

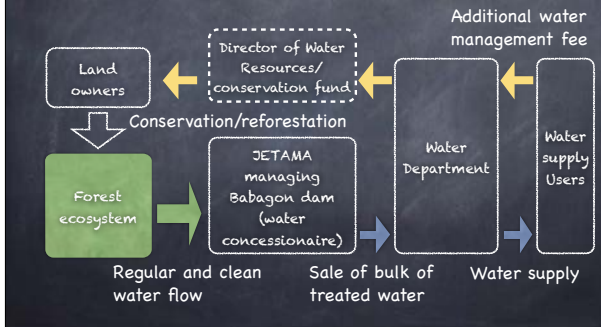
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Payment mechanism: Stakeholders

- ⦿ Director Water Resources (Director of Irrigation and Drainage)
- ⦿ Water Resources Council
- ⦿ Landowners of the watershed
- ⦿ Water Dept.
- ⦿ Water concessionaire (JETAMA)
- ⦿ Lands and Surveys Department
- ⦿ Sabah Forestry Department
- ⦿ Sabah Parks
- ⦿ NGOs assisting indigenous communities in Sabah

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Mechanism of PES for Babagon dam watershed



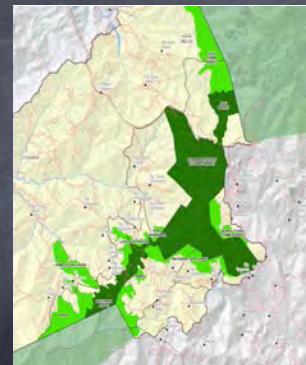
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Application of REDD+

- Core area would be considered as no threat and no value in REDD+ framework
- Assessment of carbon at risk in the Buffer Zone and Transition Area in CRBR.
- Measurement of carbon value by forest conservation and sustainable management.
- Monitor and evaluate Eco-Linc Project (the pilot of EU REDD+ Project) in the context of CRBR management
- To be integrated in the Sabah REDD+ Roadmap

41

Kinabalu Ecolinc and CRBR



Kinabalu Ecolinc and CRBR

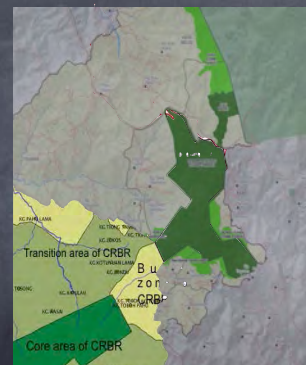
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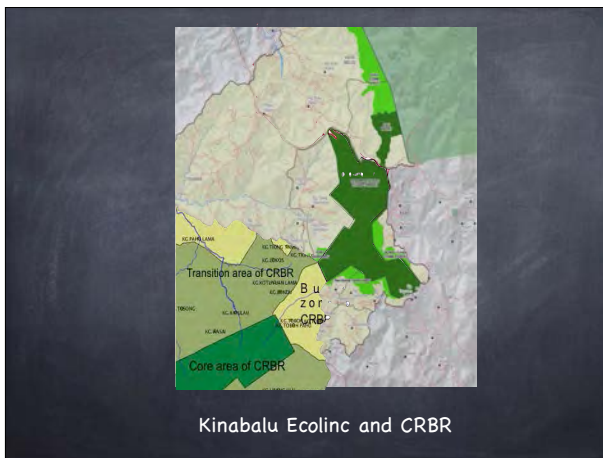
Kinabalu Ecolinc and CRBR

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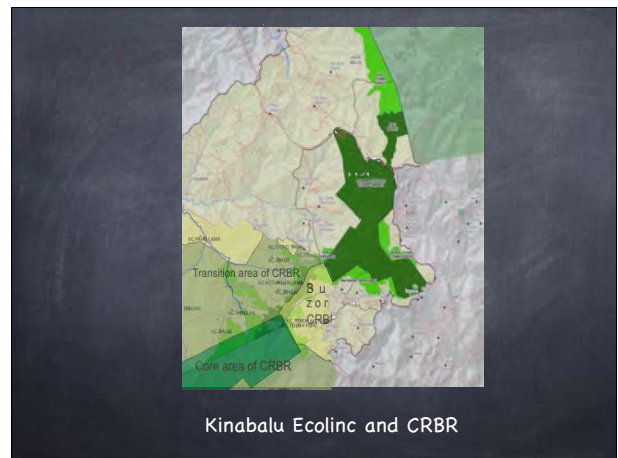


Kinabalu Ecolinc and CRBR

42-4



42-5



42-6

Control subsidy to maintain ecosystem services in rural development in CRBR

- ④ Do the landowners want to develop monoculture plantation (oil palm and rubber) only because of their competitiveness in market?
- ④ They are heavily subsidised by the government: positive incentive for poverty alleviation, but for ecosystem services?
- ④ "Idle land" called in the rural development context includes the forest providing ecosystems services.
- ④ "Agropolitan" scheme: mainstream of poverty alleviation

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- ④ Some MESEJ/Micro MESEJ projects by KPLB (settlement of poor households with rubber/ oil palm plantation) are in CRBR
- ④ MPOA provides RM9,000/ha as subsidy (under TBSPK scheme) for small oil palm farmer.
- ④ LIGS provides rubber seedlings and earthwork for planting.
- ④ There are less established scheme to subsidise alternative livelihood with ecosystem services maintained/improved.

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- ④ The third option for poor households: -
 1. Monoculture for income generation
 2. No monoculture no income
 3. Conservation/rehabilitation/sustainable land use for PES and other economic incentives
- ④ Economic incentives and subsidy for agropolitan and monoculture plantation in CRBR should be regulated.
- ④ More economic incentive and subsidy for land use with ecosystem services maintained/improved (tagal, beekeeping, organic farming, agroforestry, fertigation of ginger, temperate vegetables, fruit trees, diversification of crops, handicraft, NTFP, etc.)

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- ④ Such direction of rural development in CRBR should be shared by the concerning agencies and their district branches, such as KPLB, District Offices, Fisheries Dept., KPD, Dept. of Agriculture, MPOA, LIGS, SLDB, etc. with their clear recognition of the Boundary of CRBR and the villages in it.

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The pilot project in Kg. Tudang reviewed in the perspective

- Trial of alternative livelihood with ecosystem services maintained: bee keeping, hillside farming, organic farming, etc.
- In the high altitude (>1,000m amsl) rubber and oil palm cannot produce well, thus there is no competition between the monoculture and the alternative livelihood.



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- Considering extension of the pilot project, how many of the 399 villages in CRBR are located in the high altitude like Kg. Tudang?
- In the majority of villages in CRBR on lower elevation, critical question is if the alternative livelihood would be economically comparable with the monoculture development.
- Do we have established scheme to subsidise the alternative livelihood to make it economically more comparable with the monoculture (KPD and DoA have)?
- Can the proposed new pilot sites (Kg. Sintuong Tuong and Kg. Kiporing, Tambunan) answer the questions?

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PES and other market based mechanism through tourism

- Promotion of collection of conservation fee at entry of specific ecotourism attractions in CRBR such as: -
 1. "One village one tourism attraction" in CRBR
 2. salt trails
 3. blooming rafflesias (in sustainable manner)
 4. other rare and exotic species
 5. Agrotourism (traditional farming, organic farming)
 6. Ethnotourism (Kadazandusun culture, TEK)
- Departure and hotel taxes (Kinabalu and Crocker Range areas)

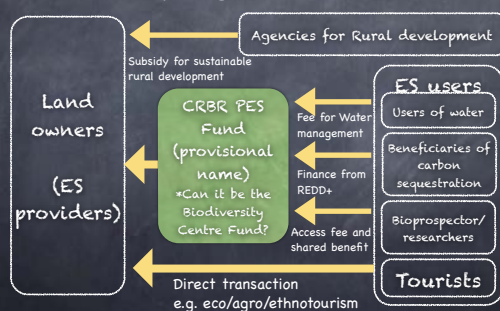
49

ABS and Bioprospecting

- The forest and villages in CRBR could be a pilot sites for enforcement of the revised Sabah Biodiversity Enactment and its rules and regulations on ABS (benefit sharing from genetic resources and associated TEK).

50

Establishment of CRBR PES Fund



51

Branding of CRBR product

- Branding of products from CRBR: honey, bottled water, organic crops, handicraft, etc.
- Eco-labelling by authority at national and/or state level

52

Quarries in CRBR

- ⦿ When Sabah Parks defined the outer boundary of CRBR, existing quarries were excluded based on site observation.
- ⦿ As Transition Area of CRBR is rich in rock reserves, there would be application of new quarries in future.
- ⦿ In general the use of ecosystem services for quarrying includes the need for freshwater supplies for mineral processing, which can be very significant. > PES for watershed
- ⦿ Quarries are also in general associated with adverse impact on biodiversity. > Biodiversity offset/ no net loss within CRBR as conditions for approval of quarries (experimental "no net loss" by Hap Seng in 2010)

53

Oil Palm plantation in CRBR (big planters)

- ⦿ PES for watershed upstream
- ⦿ Biodiversity offset within CRBR

54

Thank you.

55

添付資料 3 : 貧困撲滅・農村開発支援スキームリストとそれ
らの CRBR 管理への影響 (2011 年 7 月時点)

Description of Scheme						Implication to the CRBR management			
Title (Product/method/name of project)	Organization(s) implementing/supporting the schemes	Type of scheme	Detailed Activities	Remarks	Target area	Remarks from the point of view of biodiversity conservation	Risk of negative impact (Necessity for monitoring)	Potential to promote ecologically sustainable development in CRBR	Institutional and technological sustainability (Is the scheme established?)
e-Kasih	Sabah Development Office (SDO), Implementation Coordination Unit, Prime Minister's Department: SDO is a federal agency located in Putra Jaya KK. It is successor of JPPS (Federal Department of Development Sabah) which was in charge of implementation and monitoring of the projects under the Malaysia Plan.	Identification and registration of hardcore poor and poor households and individuals for proper targeting of poverty eradication	-Malaysian government used to identify poverty based on household income. Applying the international standard introduced by UNDP, SDO is now using per capita income to identify and categorize poor in e-Kasih. The criteria are as follows: - *miskin tegar (hardcore poor): people with monthly income below RM540/family, or below RM110/capita * miskin(poor):peoplewithmonthlyincomeRM960-541/familyorRM200-111/capita *mudah miskin (vulnerable poor): people with monthly income RM1,500-961/family or RM300-201/capita - e-Kasih is accessible through the net, but password is changed everyday. KPLBS is allowed to access to e-Kasih in Sabah. Each District Office has access to e-Kasih of the district. - Hardcore poor and poor households registered to e-Kasih are first identified and proposed at District Office.		Every quarter Sabah state government has a meeting on poverty eradication chaired by Chief Minister, where SDO reports status of e-Kasih and other agencies report their effort for poverty eradication.	It helps efficient poverty eradication in CRBR. Impact to ecosystem and biodiversity is not considered in the process of the poverty eradication utilizing e-Kasih	Neutral (It depends on the shemes applied to the poor households registered in e-Kasih)	High	High
MESEJ (Programme Mini Estet Sejahtera)	- Implementation: District Offices - Coordination: Rural Economy Improvement Division, KPLBS	so-called "Agropolitan" scheme: combination of development of farmland (rubber, oil pal, etc.) and houses provided to poor farmers migrating to the project site (new village).	- Minimum size of the project area is 250 acres (100ha), larger scale than PKS. - As essential part, it includes preparation of housing.	MESEJ is one of main devices by the state government to eradicate poverty.	Beaufort, Papar, Penampang, Tuaran, Ranau, Tambunan, Keningau, Tenom (List of the target villages is acquired)	Most of projects under MESEJ is preparation of plantation of oil palm or rubber with housing and other infrastructure. Development of the agropolitan site by such schemes in the buffer zone is not suggested	High	Mid.	High
Micro-MESEJ	KPLBS	Same as MESEJ except its smaller size (less than 250 acre).				Development of the agropolitan site by the scheme in Buffer is not suggested	High	Mid.	High
1 District 1 Product	KPLBS	Promotion of key product(s) in each district	KPLB request each District Office annually to identify target product(s) for the scheme in the year. Some District Offices list a few products, but some do none. The target products can be those of the primary industry or secondary industry. Different divisions under KPLB are in charge of the proposed projects, such as the projects for the primary product under the divisions of Mr. Rajibi and Mr. Najib and the secondary product under Mr. Sayuti's division. KPLB provide assistance to promote the target products by providing necessary inputs such as building, machinery, materials, training, etc.	Previously it was known as 1 village 1 industry product with the original approach introduced from Japan. Just after introduction of the scheme, there were too many (approx. 3,000) applications for the scheme. Many applications were based on misunderstanding that each of all villages should have own industry. There was also common misunderstanding that villages should have "Industry" especially the secondary industry, then there were some inappropriate projects, such as development of motor vehicle workshop in a village. On the other hand, District Officen was found to be capable to identify appropriate product for the district.	All the districts in Sabah, and Kota Kinabalu (its suburban division is KPLB's counterpart)	KPLB will provide the list of target products for the scheme in the 8 districts and KK for these 10 years.	Mid.	High	High

Description of Scheme						Implication to the CRBR management			
Title (Product/method/name of project)	Organization(s) implementing/supporting the schemes	Type of scheme	Detailed Activities	Remarks	Target area	Remarks from the point of view of biodiversity conservation	Risk of negative impact (Necessity for monitoring)	Potential to promote ecologically sustainable development in CRBR	Institutional and technological sustainability (Is the scheme established?)
PKS (Program Kampung Sejahtera)	- Implementation: District Offices - Coordination: Rural Economy Improvement Division, KPLBS	Financial and technical assistance to improve infrastructure and livelihood of a village	- Projects differ according to needs of villages, such as development of infrastructure, income generation through production, etc. - For income generation, KPLB appoint the other agencies as leading agency, SLDB, etc., FAMA. Budget from KPLB is channeled to the leading agencies as "professional fees." - Construction of infrastructure will be open tender for contractors.		In 2010 it covered 140 villages in Ranau, Tambunan, Keningau, Tenom, Beaufort, Papar, Penampang, Tuaran. In 2011 the number of villages covered increases to 200. (List of the target villages is acquired)	KPLBS is implementing environmental training course to JKKK of 80 under PKS. Kg. Sejetra on how to manage and recycle the waste.	Mid.	Mid.	High
PPES (Program Peningkatan Ekonomi Sabah/ localized economic improvement programme)	KPLBS	Assistance to increase household income through economic activities. PPES provides financial support (seed money) and management services to carry out economic activities. (Similar to PPP)	Projects to be assisted can be aquaculture, agriculture, animal husbandry, etc. Most of essential inputs to initiate activities except the labour force by the target people themselves, are provided, such as land preparation, seeds, fertilizer, materials, etc. for agriculture. A project should be proposed by a group of people including at least 5 households. Registration to e-Kasih is not strict qualification to get this scheme, though priority is given to hardcore and poor households in this scheme too.				Mid.	Mid.	High
PPP (Projek Peningkatan Pendapatan/ Income Enhancement Project)	KKLW (Ministry of Rural and Regional Development, federal government)	PPP is implemented to help increase household income through economic activities. PPP provides financial support (seed money) and management services to carry out economic activities worth RM10,000 per participant, as well as RM1,500 for pre-project training (if necessary).					Mid.	Mid.	High
1AZAM	Ministry of Women, Family and Community Development, federal government	The ministry channels big additional funding (RM40 million) to the state agencies for poverty eradication.	1Azam have 4 different programmes, such as 1Azam Tani (agriculture), 1Azam Kerja (employment), 1Azam Niaga (entrepreneurship), 1Azam Khidmat (service). They channel their money to Ministry of Agriculture and Food Industry, Sabah. Under 1Azam, temporary allowance (cash) to hardcore poor households is provided, with condition that the recipients must be in the 4 programme above for sustainable income generation. 1Azam channel money to YUM for additional credit to poor households.	Number of hardcore poor households once hit "0" (zero) in December 2011, as temporary allowance was provided to the hardcore poor households under 1Azam.	In the last quarterly meeting on poverty eradication chaired by the Chief Minister, detail of 1Azam was presented.		High	High	Low

Decsription of Scheme						Implication to the CRBR management			
Title (Product/method/name of project)	Organization(s) implementing/supporting the schemes	Type of scheme	Detailed Activities	Remarks	Target area	Remarks from the point of view of biodiversity conservation	Risk of negative impact (Necessity for monitoring)	Potential to promote ecologically sustainable development in CRBR	Institutional and technological sustainability (Is the scheme established?)
Tagal	Sabah Fisheries Dept.	Stakeholder-driven system of rehabilitation, protection, and conservation of the river environments and the fisheries resources for its sustainable development.	At present the enforcement of the prohibitions is through the imposition of native customary laws that are backed by the Native Court and also Sabah Inland Fisheries Aquaculture Enactment. Sustainability is achieved by dividing the rivers of each Tagal System into three one-kilometre-long zones: the Green Zone where individual villagers are allowed to catch fish for own consumption at any time; the Orange Zone where harvesting and sharing of fish on a community basis is carried out at specific times decided by the local Tagal Committee; and the Red Zone where catching of fish is totally prohibited. The success and achievement of the Tagal System underlines the smart partnership forged between riparian river communities and the Sabah Fisheries Department. The Fisheries Department's roles are: - - acts as technical advisor to the Tagal Committees; - operation of a Tagal Model at the Fisheries Station, Babagon, Penampang; - promote the system to new areas; - carry out research to further improve the system, conduct training and public education; - materials assistances to the Tagal Committees such sign boards and fish fries; and - promote sport fishing onto the Tagal sites.	- Tagal was accepted by the villagers, as the villagers aware of decrease of fishes in the river and less benefit from them in the past. In Kota Belud, they have paddy field surrounded by many canals where there are many fishes (anabas). However, it was not the local people who finished the fishes, outsiders did. - Successful tagal and associated tourism (fish massage) is observed in Luanti Baru, Ranau. - Tagal utilize two laws to protect the river, such as native law and the state enactment (Inland Fisheries and Aquaculture Enactment. The native law solves cases quickly, while the enactment needs time. While the enactment stipulate fine of RM50,000, the native law is vague. However the department encourages the villagers to apply the native law at first. Everybody support to enforce the native law, including politicians, police, etc. When they cannot settle a case with the native law, they will apply the enactment. - Sarawak copied the Enactment then enacted Sarawak Inland Fisheries Ordinance. Now Sarawak has 50 plus tagals.	At the moment, the number of Tagal areas established in Sabah has multiplied to 212 involving 107 rivers in eleven districts.	The river environmental education programme can promote or can be promoted by tagal.	Low	High	High
Fish Culture	Sabah Fisheries Dept.	Promotion of fish culture	- Provision of juvenile tilapias, carps, cat fish and turtles - Provided 200 juveniles per person - Training on fishpond construction and management - Duration of training : 1 week (to be held 3 times per year)	- A cat fish (local species) is easier to culture/manage by farmers.	Fish Culture Centre, Federal Department of Fisheries, Keningau targets Nabawan, Sook, Tenom, Keningau, Tambnan	Land conversion is not needed. Tilapia is alien and invasive species.	Low	Mid	High
Rare Tropical Fruit	Department of Agriculture	Conservation and Use of Rare Tropical Fruit Species Diversity with Potential for Enhanced use in Malaysia							
Fruits Tree/vegetables	Department of Agriculture (Keningau office)	Promotion of fruit production (Durian and Papaya) Promotion of vegetable production (tomatoes, egg plants, green pepper)	- Provision of seedlings, fertilizer, chemicals, and other necessary equipment, including water harvesting tank and materials for small-scale irrigation. - Regular on-farm technical support by experts of Department of Agriculture. - Labor will be provided for establishment (plowing) of the farm.	- Each district office of Department of Agriculture might have different support schemes. - Department of Agriculture provide subsidies for rice cropping farmers as follows: ² Wet-rice farming: 100 RM/Acer provided twice per year for all farmers ² Dry-rice farming: fertilizer and agro-chemicals provided once per year based on application submitted to farmers	Keningau	Small scale orchard or vegetable farm is needed.	Low	Mid	High
Coffee	Department of Agriculture (Tenom)	Distribution of coffee seedlings	Provision of seedlings (Coffea robusta) - Regular on-farm technical support by experts of Department of Agriculture	- There are 3 species of coffee, named "Robusta", "Liberica", "Arabica" - "Robusta" and "Riberica" are suitable for low land, while "Arabica" grows at highlands (usually altitude more than 1,000m) - Robusta" and "Riberica" need enough sunshine, while "Arabica" grows under shades. - "Arabica" could grow at mountain slopes in USMB village.	At least in Tenom	Small scale coffee farm is needed.	Low	Mid	High

Description of Scheme						Implication to the CRBR management			
Title (Product/method/name of project)	Organization(s) implementing/supporting the schemes	Type of scheme	Detailed Activities	Remarks	Target area	Remarks from the point of view of biodiversity conservation	Risk of negative impact (Necessity for monitoring)	Potential to promote ecologically sustainable development in CRBR	Institutional and technological sustainability (Is the scheme established?)
Other Potential Products	Department of Agriculture (Tenom)	Nuts and Fruits production	- Provision of seedlings of "Pili Nuts" and "Paradise Nuts" - Provision of fruit tree seedlings		Tenom				
Beekeeping	Rural Development Corporation (KPD)	Improved Beekeeping Promotion	- Provision of equipment (20-40 hives including traditional/improved hives, protection veil, smoker and extractor) - Training and marketing support - Technical advice and backstopping by KPD experts through regular monitoring visit	- Beekeeping by improved hives requires regular monitoring and management practices. - Traditional hives require less management compared to improved ones.	Tambunan, Keningau, Tenom, Kemabong (Tenom District), Sook (Keningau district), Nabawan, Pensiangan (Nabawan district)	Conservation of flowering plants for sustainable honey production.	Low	High	High
Vanilla	Rural Development Corporation (KPD)	Vanilla Plant Project	- Supply of vanilla seeds to farmers (contract farming with project participants) - Technical advice on management of vanilla	KPD owns central nursery and plantation of vanilla in Lumadan with a demonstration farm.		It may not need so much farmland (?)	Low	Mid	High
Pomelo	Rural Development Corporation (KPD)	Pomelo Promotion Project	- Provision of seedlings of pomelo - Regular on-farm technical support		- As a pilot, farmers registered in E-KASIH in Tenom District are the target of the support - Currently 51 farmers in Tenom District have engaged in pomelo production. - In future, KPD plans to expand the area of pomelo farm to 123 Acre (50 Ha). - Though the current support is limited only for Temon district, the activity will be expanded to other	Small scale orchard is needed.	Low	Mid	High
Mushroom	Rural Development Corporation (KPD)	Mushroom Promotion Project	- Supply of seed fungi to farmers (contract farming with project participants) - Technical advice and marketing support		Tambunan, Moyog (Penampang), Kumdasan (Ranau District)	It may not need so much farmland (?)	Low	Mid	High
Home-stay	Ministry of Tourism, Culture and Environment					It doesn't require exploitation of natural resources and biodiversity itself is its resources (in general).	Low	High	Unknown
Handicraft	Kraftangan Malaysia, (semi-governmental organisation under Ministry of Culture and Heritage, Federal government)		- designing: providing new design. how to coordinate production - technical assistance for production - marketing (providing chances to sell the products): almost every month promotion in various festivals. - assisting in providing raw material			It doesn't require conversion of land and biodiversity itself is its resources (in general).	Low	High	Unknown

Description of Scheme						Implication to the CRBR management			
Title (Product/method/name of project)	Organization(s) implementing/supporting the schemes	Type of scheme	Detailed Activities	Remarks	Target area	Remarks from the point of view of biodiversity conservation	Risk of negative impact (Necessity for monitoring)	Potential to promote ecologically sustainable development in CRBR	Institutional and technological sustainability (Is the scheme established?)
Direct Product Purchase by FAMA	Federal Agriculture Marketing Authority (FAMA)	Contract farm	<ul style="list-style-type: none"> Purchase products directly from farmers - Collects and disseminate marketing information for product promotion - Provide training courses on marketing • Collects and disseminate marketing information • Marketing promotion • Provide education and motivation to farmers • Provide infrastructure • Direct purchase agricultural produce - Kota Mardu in 2007: Training of farmers Buying ginger from the farmers and send to kk and they send them to peninsular and sarawak. 		Target products that FAMA deals with product marketing differ according to areas and district such as: <ul style="list-style-type: none"> - Keningau : ginger, yam, avocado, pumpkin, coconut - Tenom: pomelo, papaya, banana - Ginger in Kota Mardu (in 2007) 	Improvement of marketing. Small scale farmland is needed.	Low	Mid	High
Rubber	Malaysia Rubber Board	<ul style="list-style-type: none"> (1) Rubber Planting Program (establishment of new rubber plantation) (2) Rubber Re-Planting Program (rehabilitation of existing rubber plantation) (3) Re-Planting Support Program (conversion of rubber plantation to oil palm or fruits trees) 	<ul style="list-style-type: none"> (1) and (2) : support for a group of farmers (more than 15 farmers in a group) - Provision of improved seedlings, fertilizer, chemicals, and other necessary equipment. - Regular on-farm technical support - Contract labor will be provided for establishment (plowing) of the farm. (3) : support for an individual farmer - Provision of oil palm or fruit tree (durian, mango) seedlings 	<ul style="list-style-type: none"> - Improved rubber seedlings can be sold to individual farmers at a nursery of Rubber Board in Keningau (contact to Rubber Board Office in Keningau for details) - Price for an improved seedlings: 3.5 RM 		Relatively small rubber plantation is needed. Conversion of natural or secondary vegetation to rubber plantation should be discussed.	Low	Mid	High
Cacao	Malaysian Cocoa Board (Tenom Office)	- PPTK2 (Cacao Promotion project)	<ul style="list-style-type: none"> - Organization of an introductory meeting /workshop for cacao promotion project at the village level as per the request - Provision of cacao seedlings (around 1,000 seedlings per ha) and fertilizer - Regular on-farm support including grafting 	<ul style="list-style-type: none"> - There are 3 private cacao processing factories in Tenom where farmers ship dry and wet cacao beans. - Cocoa Board does not directly purchase cacao beans. - Cocoa Board implements "Community Entrepreneur Programme" for supporting practical farmers to be an entrepreneur as a cacao seedling provider or grafting expert. - Tenom office of Cocoa Board is in charge of districts in the Interior Division. 		Small scale cacao farm is needed.	Low	Mid	High
Gaharu	Sabah Land Development Board	SLDB is conducting experimental planting of Gaharu in two trial plots in Lahad Datu (200 trees) and Sook, Keningau (2.5ha) to establish an appropriate production method of Gaharu.	The development of the gaharu production method is for legalization of production and marketing of gaharu and to conserve the native gaharu in natural forest.	The officers in charge of SLDB themselves commented that the technology for producing Gaharu is still in the process of development. As industry, it is still in the "infant stage" then they didn't recommend to apply it for income generation of rural communities.	Interview to the officer in charge in SLDB of promotion of Gaharu production on 21 July 2011.	Production technology of Gaharu is still in the "infant stage" as industry.	Unknown	Unknown	Low
Gaharu	Sudah Gaharu Sdn. Bhd (a private firm)	Joint Project with Community Group	<ul style="list-style-type: none"> - A group of farmers and Sudah Gaharu jointly carry out Gaharu planting. - Sudah Gaharu provides seedlings and technical support to a community group. - Group members plant Gaharu seedlings in their farms or rubber plantation (between rubber trees). - A group establishes a community Gaharu nursery to propagate seedlings, while Sudah Gaharu provides seeds collected from quality mother trees. 	A field visit to the on-going Gaharu project site in Kuala Penyu will be arranged for an interested farmer group.	Kuala Penyu (at this moment)	Gaharu is native species. Gaharu plantation is needed. It is still in a stage of "venture business" of a private company.	Low	Mid	Low

添付資料 4：天然資源庁の水管理委員会担当職員による水源保護地域・水源保全地域の官報掲載パイロット事業案を含むプレゼンスライド



JICA training for Promotion of SATOYAMA Initiative
13 October to 15 November 2014

- Brief on WHAT IS SATOYAMA/SATOUMI?
- Training method.
- What I learned

- **SATOYAMA /satoumi initiative training**
- **Emphasizes on to realise societies in harmony with nature. Satoyama Initiative is how to maintain/manage their land in sustainable ways. For example: The abandon land develop into agriculture land by the communities and manage it in sustainable ways.**

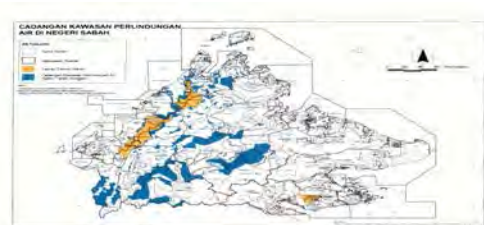
- **What WE learned**
- We are impressed by the mentality Japanese community and their culture in maintaining Satoyama for along period until now in sustainable manner.
- The high motivated and commitment and readiness mentality of Japan Satoyama Communities are the key contributing to the success of SATOYAMA/SATOUMI.
- Stressing on “ **society in harmony with nature**” by maintaining and developing their land through the combinations of developing social, economic activities (agricultures, forest, and fishery) in sustainbale ways (without harming the soil and etc)



Briefing on Gazettement Proposal of Water Catchment Area at Babagon, Moyog, Penampang District

By: Ag. Shahminan Ag. Sahari & Posin Mohd. Ali
Office of Natural Resources
11 December 2014

MAPE: LOCATION OF WATER CATCHMENT



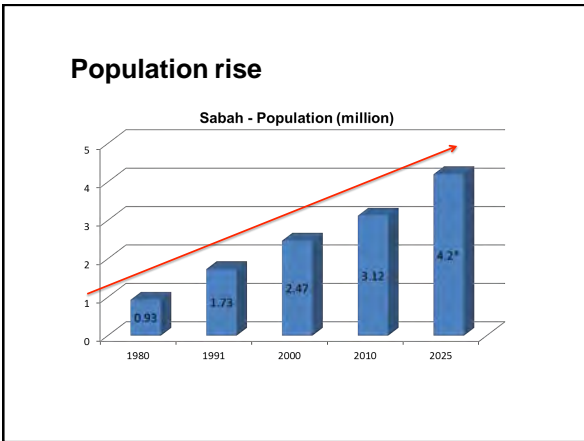
No.	Catchment	Divisi	SKA ELAN	FOREST RESERVE	SARAWAK	FELDA	SLIP	Fishery Reserve	NORTH SABAH PAUL	SAFEGA	SECS	WILDLIFE PARK	(HECTAR)
1	LAKITAN	SIMPANG	/	Kelua VI	-	-	-	-	-	-	-	-	18,203
2	PADAS	TENOM	/	Kelua II dan IV dan I	/	/	-	-	-	-	-	-	77,600
3	MENBAKUT BINSULUK	BEAUFORT	/	-	/	-	/	-	-	-	-	-	21,300
4	PAPAR (BIRU MALU KOGOPIN)	PAPAR	/	Kelua VIII	/	-	/	-	-	-	-	-	36,000
5	MOYOG	KASUTU BABAGEN	/	Kelua VI	/	-	-	-	-	-	-	-	10,000
6	TUARAN	TUARAN	/	Kelua VII	/	-	-	-	-	-	-	-	61,400
7	KEDAMAMAN TEMBUK	KOTA BELUD	/	-	/	-	-	/	-	-	-	-	79,300
8	TEGARAGANG	KUDAT	/	Kelua III	-	-	-	-	-	-	-	-	300
9	LANGKUN BAKAU	KOTA MARAUDU	/	Kelua III	/	-	-	-	-	-	-	-	22,900
10	BENGOKA	PTAS	/	Kelua II / I	-	-	-	/	/	-	-	-	77,200
11	LARUK	RANAU	/	Kelua II	/	-	-	-	-	-	-	-	6,900
12	KOLOPU MEANAD	BELURAN	/	Kelua II/VI	-	-	-	/	-	-	-	-	22,700
13	KINABANTANGAN TONGOD	KINABANTANGAN TONGOD	/	Kelua II-VI	-	-	-	-	/	-	-	/	1,306,800
14	SIGAMA	LABAD DATU	/	Kelua II-VI	-	-	/	-	-	-	-	-	207,800
15	TUNGKU	LABAD DATU	/	Kelua VII	-	/	-	-	-	-	-	-	15,300
16	SEFAGAYA	LABAD DATU	/	Kelua VI	-	-	-	-	-	-	-	-	2,400
17	KALUMBANG	SEMPORNA	/	Kelua IVI	/	-	-	/	-	-	-	-	81,800
18	TAWAU	TAWAU	/	Kelua VIII	/	-	-	-	-	-	-	-	10,500
19	MEROTAI	TAWAU	/	Kelua I	/	-	/	-	-	-	/	-	21,000
20	SAPULIT	TIBOW	/	Kelua II	-	-	-	-	-	-	-	-	5,600
	TOTAL		78	20	32	11	2	5	3	1	2	1	2,921,235

SUMMARY : LIST OF WATERCATCHMENT

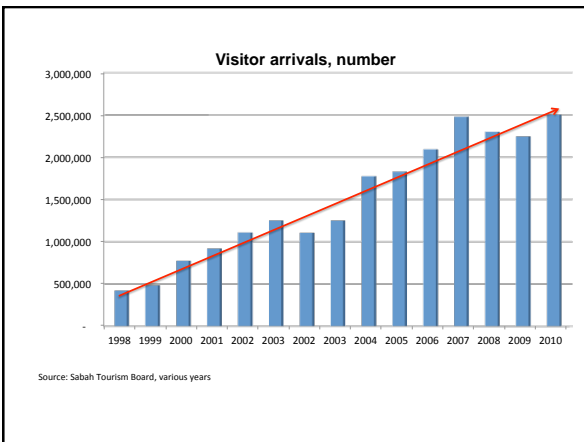
- 78 water catchments are identified in Sabah so far
- Acreage Two Million Nine Hundred Twenty One Thousand and Two Hundred Thirty Five **hacter** **2,921,235**
- 20 Area - State Land
- 32 – Forest Reserve
- 11 – Sabah Parks
- 2 -Felda
- 5 - Sabah Land Development Board (SLDB)
- 3 – Agriculture
- 1- Wild Life and others

• **Why, BABAGON WATERCATCHMENT NEED IMMEDIATE GAZZETEMENT ???????**

1. The population increase
2. Water quantity decreasing (survey showed by 2020 , Kota Kinabalu might have not enough water supply

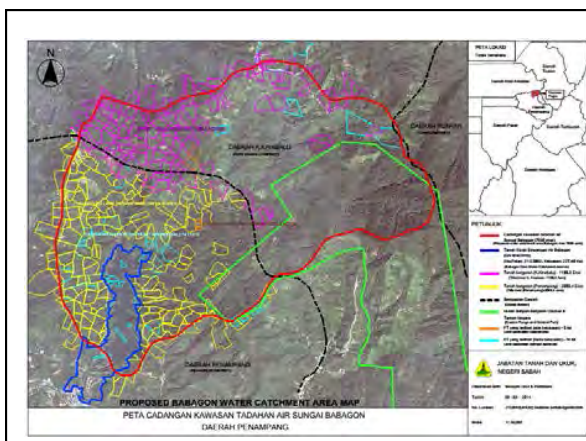
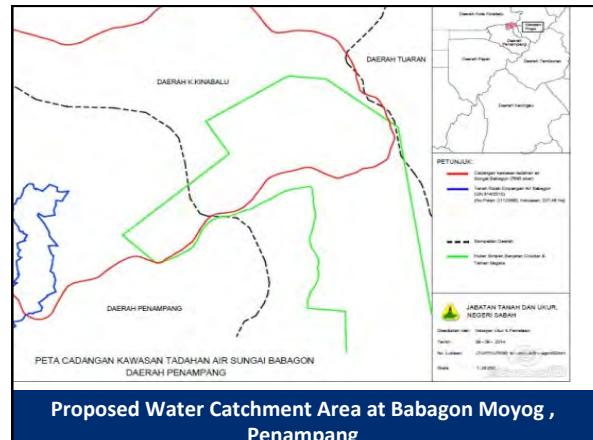


• Visitors to Sabah expected to increased. It might affect tourism industry



PURPOSE OF BRIEFING

To update the land status and issues for the proposed water catchment area at Babagon Moyog , Penampang District



Summary of Land Status in Proposed Water Catchment Area at Babagon Moyog

1. Proposed Area	Acreege : 3,114 Hectare (7,695 acre)
2. Number of land owner	: 322
3. Total area of alienated land	: 1,324 hectare (3,271.7 acre)
4. Acreege of Dam Area	: 155 hec (384 acre)
5. Area of Sabah Park	: 705 hec (1741 acre)
6. Approximate state land	: 930 hec (2,300 acre)
7. Total of land applications	:79 (5 approved) No Title yet

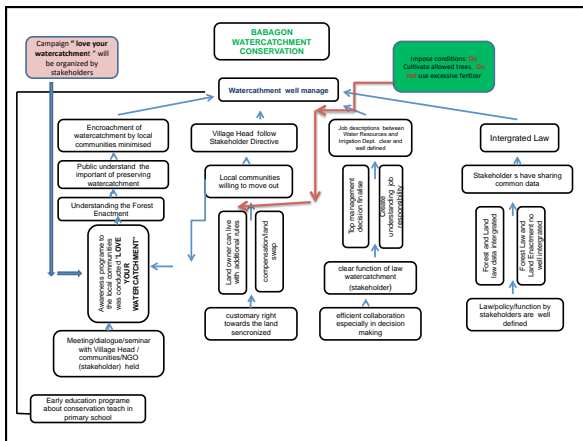
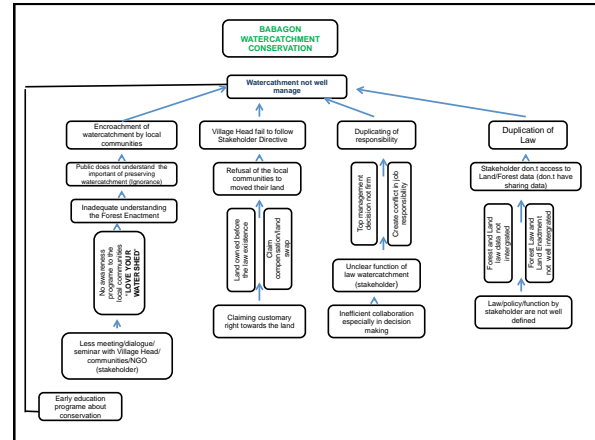
Steps of formulation Action Plan: Analyze issues and problems in Babagon Watercatchment area

1. Identify Stakeholders / Issues & problems

	INSIDE (STAKEHOLDERS)	OUT SIDE (STAKEHOLDERS) Beneficiaries
1.	Director of Forestry Department	1. Community Leaders
2.	Director of Land and Survey Department	- Local people (JKKK/KK)
3.	Director of Environment Department	- Farmers
4.	Director of Sabah Park	2. Oil Palm Company
5.	Director of drainage and irrigation Department	3. Timber company
6.	Director Wild Life Department	4. NGO/Volunteer
		5. Politicians

Primary Finding							
	a	b	c	d	e	f	
1	Duplications Respon sibilities	Unclear directive functions between water resources and the roles of Drainage & Irrigation Department (DID) as user and agency and regulator of water resources in Sabah.	Inefficient collobaratio n especially in decision making	Creates conflicts of jobs responsibilities	Definition of functions between Water Resource s and Irrigation Departme nt must be well define decisions	Meeting between Stakeholders: 1. Attorney General Office 2. Natural Resources Office 3. Irrigation Department	Integrated approach: Top management decision (State secretary)
2	Land Data and Forestr y not integrat ed	District Land Boundary differ from Forest District area Customary Right	Create lope hole opportunity for illegal logging, cultivation and settlers	Inadequat e sharing land / forest data	Relevant law is not harmoniz ed	Coordination meeting Stakeholders (Land Survey, Forestry and Native Council)	Decision Making State Attorney General decision

a	b	c	d	e	f	g	
3	Water Catchment Areas not gazetted	Agreeable watershed areas are not fully endorsed by the stakeholders	Unofficial list of water catchment	list of watershed not recognise either by stakeholders	Sharing information, and challenge s facing the watershed areas	Integrated approach: Exchange information with each other to manage watershed areas	Meeting: Meeting to endorse agreeable "MASTERLIST WATERCATCHMENT AREAS" Council to endorse and gazette
4	Local people do not follow Land used zoning	30% land used for Agriculture, 15% housing (residential), 55% Forest	Lands are owned before the existence of Forest Enactment and Land Ordinance	Local People refuse to move out from their customary land (customary right)	Create conflict between communities and relevant authority (Land Survey and Forestry Department)	Strategy-land use practices: Individual land uses and community group to change their land use practice (do and don't) Do-type of allowed trees/paddy field. Don't-to avoid land degradation (use excessive fertilizer) Compensation – Move from a critical land livelihood activities that are sustainable development – enforce rule under Land Ordinance Cap.68 and Water Resources Enactment	Capacity Building To encourage the land owners/land occupiers to changes some of their traditional practice and quantity of soil being lost from their land "HARMONY WITH NATURE"



Project Name: PILOT PROJECT GAZZETMENT OF BABAGON WATERCATHMENT AREA Duration: 6 months-1 year
 Date: 11/11/2014
 Target Area: Babagon , Penampang District Target Group: LOCAL COMMUNITY (LAND OWNER IN WATERCATHMENT AREAS)

Summary of the Project Framework	Verifiable Indicator of Achievement	Means of Verifiable Indicator	Assumptions/Risks
Overall Goal Gazette ment of Babagon Water catchment Area	- Increase water usage - Increase tourism		Local people do not want to move out from their land And integrated watershed management plan prepared and executed
Project Goal Urgent : Effective watershed management Implementation	Complete land used Statistic of catchment areas: Proposed Area : 3,114 Hectare 7,695 acre),	Total area of alienated land : 1,324 hectare (3,271.7 acre) Acreage of Dam Area: 155 hec (384 acre), Area of Sabah Park: 705 hec (1741 acre), Approximate state land: 930 hectare (2,300 acre)	Local people do not want to move out from their land

Outputs			
1. Encroachment of watercatchment by local communities minimised		1.1. awareness Program to be schedule 1.2. guidelines are ready	stakeholders willing to use Catchment list as references Stakeholders willing to share information on e.g. Boundary of FD and L&S
2. Village Head follow Stakeholder Directive		2.1 Existence of law that are applicable to their land 2.2 Guidelines are ready	
3. Job descriptions between Water Resources and Irrigation Dept. clear and well defined		3.1 Job description list are ready and well-defined 3.2 Terms of reference are ready	
4. Intergrated Law		4.1. Conflict laws have been identified	

Activities	Inputs	Pre-conditions
1.1. Drawing Competition for children	NGO / JICA / JKKK / KK	
1.2. collecting garbage near the riverbanks areas	Cooperation by JKKK/KK to increase community awareness	
1.3. February 2015, April 2015 Explanation of allowable trees that can be planted in their land and inform bad implication if they plant prohibited trees by the Stakeholders (Land and Survey, Forestry Department, Environment Protection Dept & Sabah Parks)	LS/FD and EIA	The Water Resources Council takes positive initiative for watershed declaration by organizing programme and available budget to be used in meeting/ dialogues and etc
1.4. Land Survey will organize meeting to finalize the total of local population who want to move out from their land, and remain, end March 2015	1. Health officer to explain the bad implication of contaminated water	
Design program/campaign: 1.5 "Love your watercatchment" program with community, every 6 months	2. Officer from Environment / Health Dept. office explain the importance of protecting water catchment	

Activities	Inputs	Pre-conditions
<p>3.1. By January 2015, NRO organize pre-meeting between stakeholders to finalise the job descriptions : Water Resources and Irrigation Department</p> <p>3.2 Middle January 2015, Second meeting to follow up 2nd drafted job description</p> <p>3.3 . Final meeting end January : Job descriptions are final ready to be announced for implementations.</p> <p>3.4. State Secretary will announce the final job description between Water Resources Div/Irrigation Dept. end February 2015</p>		

Activities	Inputs	Pre-conditions
<p>2.1. 15 March 2015. Explanation of legislation for nature conservation to the villages / discussion with the villages head/ Chief security committees about status of their land (customary right) by collaboration between stakeholders (land Office, NGO) : purpose is to explain that their lands are falls in water catchment areas (protected areas) Make campaign in local media about penalties for illegal activities</p> <p>2.2. 30 March 2015, dialogue about rules and regulation to local people if they decide to remain in their land, or if they opt to move out</p> <p>2.2.1 awareness program with local people as well as school children will be schedules consistently</p> <p>2.2.2 Dialogue with Head Village, Chairman of village security committee</p> <p>2.2.3 Campaign "Love your Water catchment</p> <p>WILL BE PUT IN ANNUAL CALENDAR</p>	EIA / LAND SURVEY / FD/ SABAH PARKS	The Water Resources Council takes positive initiative for watershed declaration and programme and budget approved and released in time by the stakeholders

Activities	Inputs	Pre-conditions
<p>4.1. Meeting between stakeholders with Director of Natural Resources to coordinate the amendment conflict t law (Land Ordinance & Forest Enactment) 13 & 20 February 2015, 13 & 20 Mac 2015</p> <p>4.2. State Attorney General will make final announcement law that agreeable to stakeholders</p> <p>4.3. Third week April to table to cabinet meeting for approval</p> <p>Design program/campaign:</p> <p>3.1. "Love your water cathcmentm " program with community, every 6 months</p>		Integrated watershed management plan prepared and executed

Gazettelement Option

Option 1 - Gazettelement Under Section 36

- All alienated land would be acquired and compensated;
- Approved land application and not approved land application would be revoked;
- All the native customary rights land would be compensated.

Gazettelement Option

Option 2 - Gazettelement Under Section 38

- Control development of alienated land;
- Purpose of control alienating land.

Option 3 – Gazettelement Under Section 36 & 38

- Alienated land gazettelement Under Section 38;
- State land and Sabah Park area gazettelement Under Section 36.





Arigato Gozaimasu ,Thank You , terima kasih