No.

南アフリカ共和国
ムプマランガ州中等理数科教員再訓練計画
終了時評価報告書

平成15年3月
（2003年）

国際協力事業団
アフリカ・中近東・欧州部

地四ア
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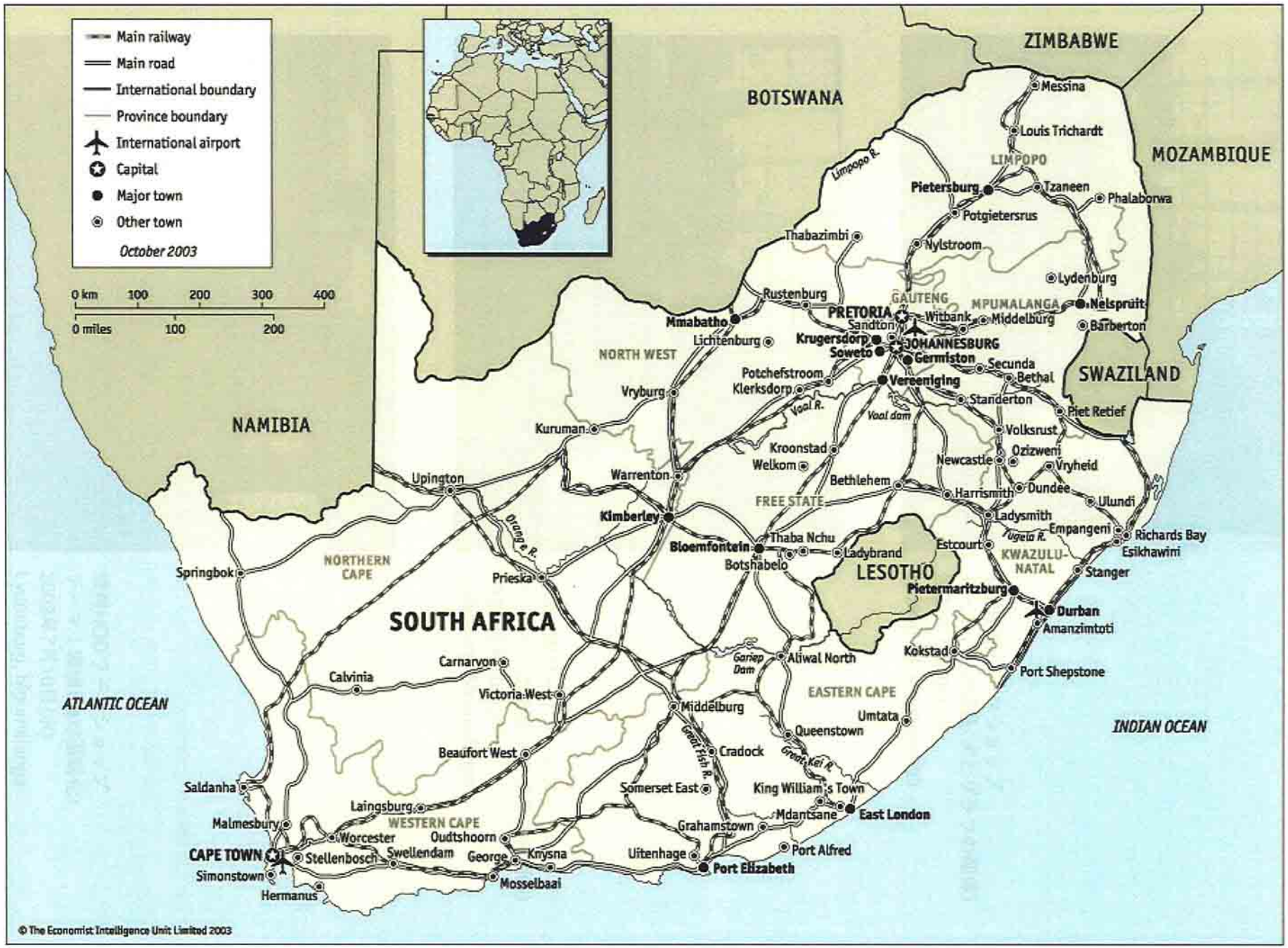

数学HODワークショップ
テーマ：一次関数(式とグラフの関係)
2002年7月10日(水)
Lydenburg, Mpumalanga

数学HODワークショップ
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テーマ：環境(地球温暖化)
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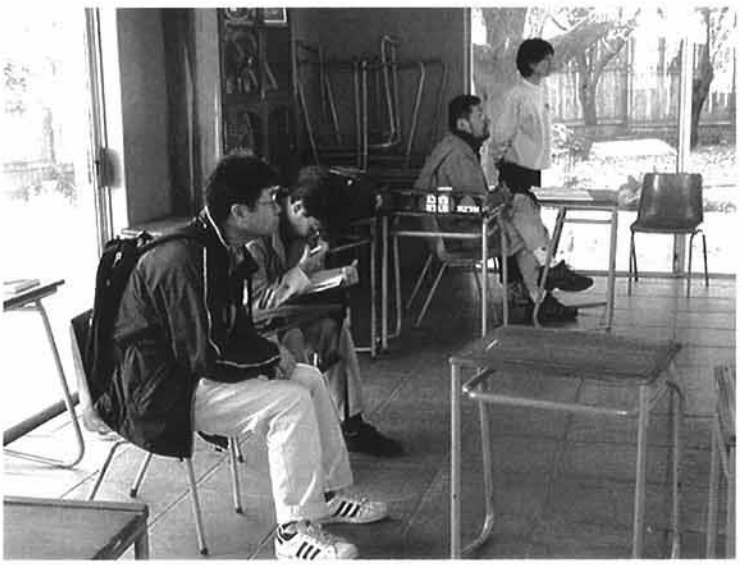

ワークショップ観察中の短期専門家
チームおよび評価調査団

理科HODワークショップ
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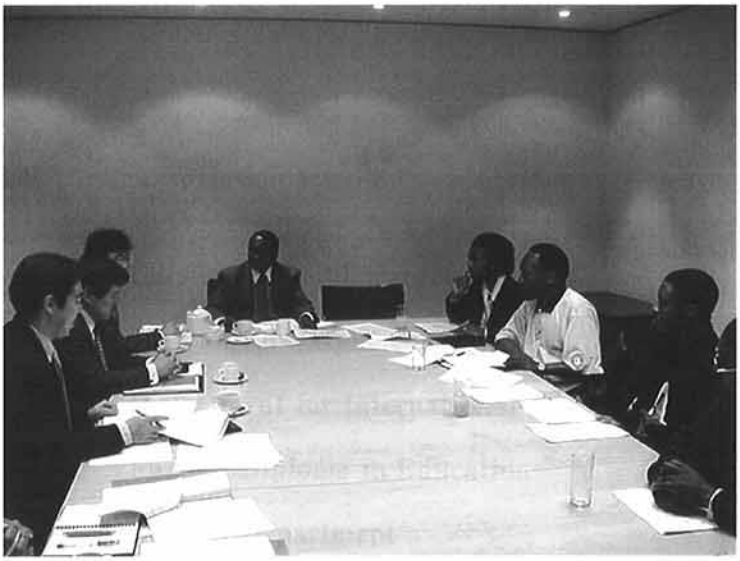
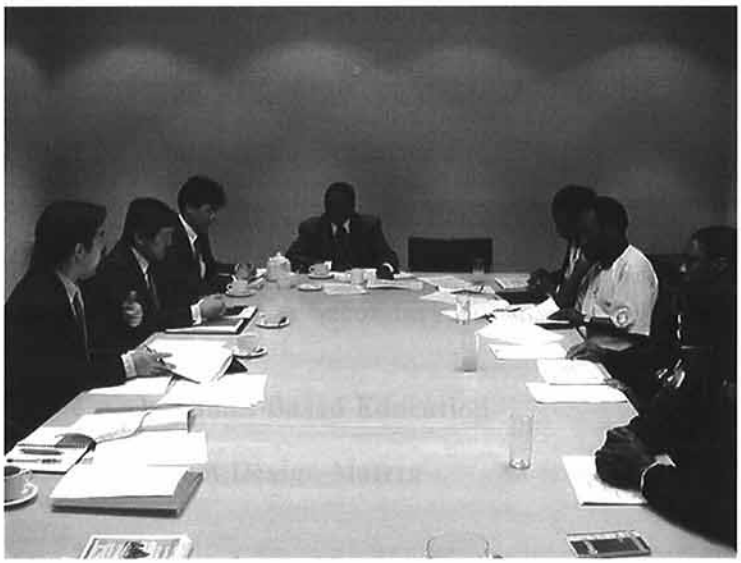


ムプマランガ州教育省への評価調査報告(Dr. T. Mashinini副大臣)
2002年7月11日(木)
Nelspruit, Mpumalanga



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略　語　表

ADEA :	Association for the Development of Education in Africa	アフリカ教育開発連合
CI :	Curriculum Implementer	指導主事
DEM :	District Education Manager	地区教育長
DFID :	Department for International Development	英国国際開発省
FDE :	Further Diploma in Education	継続教育修了書
HOD :	Head of Department	理科・数学の教科主任
INSET :	In Service Training	現職教員研修
IT :	Information Technology	情報技術
JOCV :	Japan Overseas Cooperation Volunteers	青年海外協力隊
MDE :	Mpumalanga Department of Education	ムプマランガ州教育省
MPSI :	Mpumalanga Primary Science Initiative	ムプマランガ州初等理数科教員再訓練プロジェクト
MSSI :	Mpumalanga Secondary Science Initiative	ムプマランガ州中等理数科教員再訓練プロジェクト
OBE :	Outcomes-Based Education	成果基点教育
PDM :	Project Design Matrix	プロジェクト・デザイン・マトリックス
PLM :	Project Logic Matrix	プロジェクト・ロジック・マトリックス
TC :	Teachers Center	教員センター

評価調査結果要約表

1．案件の概要		
国名：南アフリカ共和国		案件名：ムプマランガ州中等理数科教員再訓練計画（MSSI）
分野：教育		援助形態：個別専門家チーム派遣
所轄部署：アフリカ・中近東・欧州部アフリカ課		協力金額：約4億6,800万円
協力期間	1999年11月15日～ 2002年3月31日	先方関係機関：ムプマランガ州教育省
		日本側協力機関：文部科学省、広島大学教育開発国際協力研究センター、鳴門教育大学
その他他の関連協力：国別特設研修「理数科教員養成者研修」「地方教育行政」 長期研修 草の根無償資金協力 青年海外協力隊派遣「理数科教師」		

1－1　協力の背景

南アフリカ共和国（以下「南アフリカ」と記す）では、アパルトヘイト期において黒人層に対して十分な教育機会が与えられず、アパルトヘイトが撤廃された今日も、白人との教育機会・質の不均等が問題となっている。特に、黒人層に対する理数科教育は意図的に軽視され、不十分な教育が行われてきたこともあり、現在の黒人理数科教員のなかには、十分な知識・指導技術をもたないものが少なくない。特に旧ホームランド（旧白人体制下におけるアパルトヘイト政策に基づく黒人自治地域のことで、1994年の南アフリカの民主化時に4つの独立ホームランドと6つの自治ホームランドがあった）を多く抱えるムプマランガ州（以下「ム州」と記す）においては、他州と比べその教育レベルは低く、教員のレベル向上が課題となっていた。このような状況のなか、新カリキュラムの導入に伴い、教員のレベル向上が緊急の課題となり、同州では、1996年より英国国際開発省（DFID）の支援により、英語・算数・理科を指導する小学校高学年教員に対するプロジェクトが実施されている。我が国は、DFIDとともに、同州の教育センター建設・改修に支援を行ってきたが、それに引き続き、中等理数科教員に対するレベル向上のためのプロジェクトへの支援が同州から要請された。

1－2　協力内容

我が国は、ム州教育省・プレトリア大学と共同し、州内中学校に対して学校ベースの現職教員研修のシステムを整備する。

（1）上位目標

ム州の中学生が、質の高い理数科の授業を受けることができる。

（2）プロジェクト目標

1）ム州の黒人理数科教員の指導力が向上する。

2）ム州教育省に、理数科現職教員研修のシステムが構築される。

（3）成　果

1）本邦研修（国別特設研修）を通じ、指導主事（CI）が必要な知識・技術をもつ。

2）CI によって各中学校の理科・数学の教科主任（HOD）が、現職教員校内研修を指導できる能力を育成する。

3）各中学校において HOD が校内研修を実施できるようになる。

4）各学校において、校内研修に協力的な環境をつくる。

5）ム州教育省が教員研修システムの計画・モニタリング・評価ができるようになる。

6）校内研修用教材が開発される。

7）教員センターの活用（草の根無償資金協力による協力）を支援する。

8）日本の教育手法の南アフリカへの適用可能性に係る研究（プレトリア大学への研究支援）を支援する。

（4）投　入

日本側：

長期専門家派遣	2名	機材供与	1,000万円
短期専門家派遣	39名	ローカルコスト負担	4,100万円
研修員受入れ	69名		

相手国側：

カウンターパート配置	50名
土地・施設提供	
ローカルコスト負担	1,000万円

2．評価調査団の概要

調査者	団長・総括　：村田　敏雄　JICA国際協力専門員 援助（協力）手法：長尾　眞文　広島大学教育開発国際協力研究センター教授 協力評価　：門脇　聡　JICAアフリカ・中東・欧州部 プロジェクト評価：東野　英昭　株式会社レックス・インターナショナル 外部評価　：Dr. Zenda Ofir　Consultant, Evaluation Networks （上記団員とは別に外部評価レポートを作成）	
調査期間	2002年6月16日～7月20日	評価種類：終了時評価

3．評価結果の概要

3－1　評価結果の要約

（1）妥当性

教育の充実は、民主政権の樹立以来、南アフリカ社会が最も力を注いでいる課題であり、アパルトヘイト以降、民主政権の下で、教育関係の歳出は、3,180 万ランド（1994 年）から 5,110 万ランド（2000 年）へと増大した。その結果、南アフリカは世界でも最高水準の教育投資国家となった。本プロジェクト（MSSI）のプロジェクト目標と上位目標は、南ア

フリカ社会のニーズに対して高い妥当性をもっているものである。MSSI は、学校ベースの現職教員研修実施システムの確立と理数科教師の能力向上を通じて、理数科教育の質を高めること、並びに 8、9 年生の生徒の理数科学力を高めることを目的とするプロジェクトであり、南アフリカ政府の政策と合致している。さらに、理数科教育が我が国の得意分野であり、今日の技術立国の根幹を支えてきたものである点からも、妥当性が認められる。

（2）有効性

プロジェクト目標の達成度は、比較的短いプロジェクト期間を考慮すると、満足できる水準であると評価できる。学校ベースの現職教員研修に関しては、確実に基礎が築かれつつある。

本プロジェクトでは、CI が日本における国別特設研修で、グループで翌年 1 年間に行うワークショップの計画を立て、実施に必要な教材の開発、その教材の背景となる知識・技術を学ぶ。CI は、本邦研修の成果を活用し、現地において担当地区内の HOD を対象としたワークショップを実施する。各学校の HOD は、ワークショップに参加し、定期的に校内研修を運営するために必要な技術・知識・教材作成法等を学ぶという上流から下流へ知識が移転されるサイクルになっている（カスケード方式）。本評価におけるインタビューアンケート調査の結果からは、教育省幹部の指示・監督の下、CI が着実に計画を実施するなど、本方式の導入が円滑に進み、機能し始めている。これらは、国別特設研修や、短期専門家との交流などの MSSI の活動を通じて得られた成果であり、特に CI が、プロジェクト開始後の 2 年半で学校ベース現職教員研修を主体的に運営する能力を身につけたことは、プロジェクト関係者の一致した見解である。また、評価時点で、およそ 60%近くの中学校（540 校中 313 校、60%弱）がプロジェクトに参加しており、その数はこれからも増加する見込みである。

（3）効率性

MSSI の成果は、ほぼ順当に達成されている。MSSI の主な投入は短期専門家の派遣と研修であり、国別特設研修に派遣された CI がコーディネーターとして機能するワークショップにおいて HOD に移転されており、ワークショップに合わせて派遣される短期専門家チームの指導と合わせ、成果発現に貢献している度合いが高い。また、プレトリア大学は、南アフリカに現存する理数科教育のノウハウや技術を有効に活用しつつ、「日本の経験」の現地化を促進するという役割を担い、学校調査、ワークショップに対するモニタリングの実施を行っているが、現状では数学分野での対応が不十分である。本プロジェクトにおいては、長期に専門家として派遣されることが困難な大学教員を短期専門家として派遣し、また彼らが日本での研修の受入先となることでム州教育省のコーディネーターチームに技術支援を行いつつ、他の必要な投入（長期研修、研究支援費等）を行っており、過剰な投入と思われるものは見られない。ただし、草の根無償による教員センターへの機材投入は当初計画からは遅れており、教員センターの活用がまだ十分ではないという点は残るものの、全体として効率性は高いと判断できる。

（4）インパクト

プロジェクトは理数科教育での実践を通して、ム州における学校ベース現職教員研修のイメージを高めた。その結果、理数科以外の教科、例えば語学教育の分野でも、学校ベース現職教員研修が実施されるようになった。また理数科の教員については、従来は授業の進め方や教材について同僚に相談したり、第三者からのアドバイスを受けたりする習慣がなかったが、MSSI による学校ベース現職教員研修への参加を契機に、教員同士のグループワークが行われるようになり、授業のレベル向上につながっている。

また、日本側協力機関の鳴門教育大学が今回の MSSI への関与を通じてプレトリア大学と、国際学術交流協定書に調印したことも、正のインパクトの 1 つとしてあげられる事項であり、今後の交流の発展が期待される。

また、プレトリア大学は、MSSI に関する理数科教育研究について学会発表を行っている。アパルトヘイト時代に、白人系大学として存在していたプレトリア大学が、ム州の中等教育の現場で研究を実施することは、同大学単独のアプローチでは困難であったと思われる。MSSI の活動を介して、プレトリア大学が州教育省との信頼関係を築き、同州をフィールドとして研究が実現できたことは、黒人と白人の融和の促進に一定程度貢献しているととらえられる。

他方、「ム州の 8 年生と 9 年生の理数科のスキルが向上する」及び「理数科教員が、授業法を改善し、担当科目の深い理解を獲得して、州の理数科教育の質が向上する」という上位目標の達成には、今後まだ、かなりの時間を要するものと判断する。また、達成を判断するためのデータの取得が今後必要となる。

（5）自立発展性

南アフリカは、大規模な教育予算を確保しており、ム州教育省も、他のアフリカ諸国と比較して、潤沢な予算をもっている。このため、国、あるいは同省の理数科教育に関する政策・方針に大きな変更がない限り、財政面での問題によりプロジェクト活動が滞る可能性は少ないと思われる。また、MSSI は教育省、プレトリア大学、日本の三機関合同のプロジェクトという位置づけであるため、教育省スタッフの当事者意識は高い。

現在まで、50 名を超える国別特設研修への派遣が実施された。主に CI から成る研修参加者は、日本の教育についての全般的な知識を身につけた。さらに日本人専門家とのこれまでの交流を通じて、知識をム州での実際の展開に結びつける能力を身につけており、核となる人材は育成されたものと判断する。ただし、実際の MSSI 活動を担う CI は、必ずしも十分に配属されているわけではなく、学校レベルでの指導は、十分に行われていない。

以上よりプロジェクトの自立発展性は、全般的に見てほぼ満足できる水準にあると思われる。

3－2　効果発現に貢献した要因

（1）計画内容に関すること

1）一般的に「カスケード方式」は知識・技術の移転の段階が下流になるほど効果が弱まり、活動のモニタリングも困難になるが、本プロジェクトでは、ワークショップで伝える情報を最小限の実践的な内容を中心とすることで効果の確保を図り、また、各段階での活動状況は、定型の様式を用いてモニタリング結果を報告するという下流から上流への情報の流れを組み入れたため、弱点が緩和された。さらに、CI 同士、HOD 同士、教員同士、という水平方向でも知識・経験の共有が促進されたことが高い効果につながっている。

2）単に日本で成功した経験・技術をそのまま相手国に移転するのではなく、日本の経験を提供し、現地側関係者自身が自分たちにとって役に立つものを取捨選択、咀嚼し、再構築するアプローチを重視したことにより、現地側のオーナーシップ、現状に合わせたアレンジ等が確認された。

（2）実施プロセスに関すること

1）日本側の関係者があくまで「教育省のサポート」に徹するという明確な意識をもって活動にあたり、また、教育省のビジョンの明確化とその具現化を支援するという姿勢の下、本プロジェクトを教育省の通常業務に組み込み、段階的にワークショップ運営費負担を増加させていったことが、教育省の当事者意識を高め、自立発展性を高めた。

2）通常、期間や投入が限られる技術協力の場合、一部地区をパイロット地区として同地区の成果を波及するという形態が選定されることが多い。しかし、南アフリカにおいては「機会均等」の概念が広がっており、パイロット地区への便益の集中に対する不満と成果に対する無関心という結果をもたらすことが英国の援助経験から得られたことから、ム州全域を対象とすることになった。このため、一般的なプロジェクトの規模に対し、やや野心的な目標を設定することとなったが、他方でプロジェクトが効率的に進められるための仕掛けや仕組みに踏み込んで計画・活動がなされた。

3－3　問題点及び問題を惹起した要因

（1）計画内容に関すること

前述のとおり、一般的なプロジェクトの規模に対しやや野心的な目標を設定することとなり、3年間では達成の困難な目標が設定された。

（2）実施プロセスに関すること

該当なし

3－4　結　論

ム州の地域的広がり、対象となる学校の数を考慮すると、3 年間のプロジェクト期間でプロジェクト目標を達成するには、やや難易度が高いものであったと考えられる。2003 年までに、州内の 540 校すべてを対象に MSSI を実施するためには、少なくとも同年 3 月までは、第 1 フェーズで対応することが望ましく、そのためにはプロジェクト期間の延長が必要である。

3－5　提言（当該プロジェクトに関する具体的な措置、提案、助言）

（1）プロジェクトの成果をより確実にするために、ム州教育省・プレトリア大学・日本政府の三者で共同パートナー間の協力関係を維持すべきである。

（2）学校ベース現職教員研修の機能を維持し、規模の拡大を実現していくためには、ム州教育省での予算の継続確保、及びプレトリア大学の数学分野での人員措置を増強すべきである。

（3）学校ベース現職教員研修の実施状況を確実にモニタリングするために、MSSI プロジェクトの進捗の目標値を再設定すべきである。

（4）進捗管理を行うための情報・データをはっきりと定め、これら情報の収集・集約・意思決定者への伝達を行うために導入されたプロジェクトモニタリングシステムを完成させ、確実に機能させるべきである。

（5）プロジェクトのインパクトを測定するために、理数科到達度試験への参加を通してプロジェクトの効果を測定すべきである。

3－6　教訓（他の類似プロジェクトの発掘・形成、実施、運営管理に参考となる事柄）

（1）現地側のオーナーシップを醸成し、自立発展性を高めるために、日本の経験を直接移転するのではなく、そこから活用可能な部分を抽出し、現地化するといったアプローチを採用し、それが可能となる仕組みを工夫すべきである。

（2）既存の協力形態を連携させて投下するプログラムアプローチを採用する場合、それぞれの協力形態が補完・相乗効果を生むように計画し、また投入の順番にも戦略性をもたせることが重要である。

（3）プロジェクトの活動を相手国側の通常業務に位置づけ、パイロット地区を設定せずに域内全域を対象にし、技術者（本件の場合教員）のみでなく管理者（本件の場合、学校長や行政官）をも取り込むこと、相手国内のリソースで活動の品質管理を行うこと（本件の場合プレトリア大学のパートナーシップ）等の持続可能性を確保する努力が肝要である。

（4）学校長等の管理者、州及び中央の大臣、政治家等が案件の有効性につき公言することや、表彰制度、学位取得プログラム等を相手方関係者に提供することにより、プロジェクト参加者のインセンティブを確保することはプロジェクト活動促進に有効である。

（5）協力効果をカウンターパートから垂直方向に現場レベルの者までに行き渡らせる（カスケード方式）際に、活動によって得られた技術・知識・経験を水平方向で（同じレベルのもの同士で）共有させたり、末端まで届いた技術・知識・経験の品質を評価して正負の両方のインパクト・教訓を下から上にフィードバックしたりすることによって、協力効果の流れを一方通行で終わらせないことが効果発現に有効である。

3－7　フォローアップ状況

終了時評価時点で、プロジェクト目標である州内全中等学校において、現職教員研修を実施

するシステムが構築されることは達成されていないため、これまでとほぼ同規模の活動によるフェーズ2を、2003年4月から3年間の期間で実施する計画である。

フェーズ1との違いは以下のとおり。

（1）学校単位での教員研修活動システム構築を重視したアプローチを更に推し進め、研修に基づいて実際の教室における授業の質が向上するようなアプローチを採ること。

（2）州政府の行政改革による教育行政区分の変更（10 District 制から 3 Region 制へ）に伴って、これまでのカスケード方式（州→地区→学校）から、教員たちの意欲に応じた近隣校同士のクラスター活動を導入し、研修活動の更なる活発化を図ること。

（3）遠隔地にあってこれまでのプロジェクトに参加できなかったような学校にも、プロジェクトの効果を普及させるように努めること。

（4）これまでの活動により蓄積された教材、テキスト類を体系化し、より実践的な内容に編集したうえで、これをプロジェクト参加者に普及させ、効果の平準化、底上げに努めながら持続可能性を確保すること。

こうした活動を推し進めたうえで、フェーズ 2 期間の終了後は先方の自助努力で活動を継続できるよう、期間中に体制整備・強化に努める方針である。

第1章　プロジェクトの背景と概要

1－1　終了時評価調査団派遣の経緯と目的

本件協力は、1999年11月15日から、当時の個別専門家チーム派遣協力（ミニプロジェクト）の案件として3年の協力期間をもって開始された。

本件協力は、これまでムプマランガ州（以下「ム州」と記す）全10地区のうち、1999年度（初年度）4地区、2000年度（2年度目）4地区、2001年度（3年度目）2地区を対象に研修活動が行われ、2002年3月には2001年度第3回ワークショップが終了した状況にある。これまでの協力の結果、3関係者（ム州、日本、プレトリア大学）の有機的連携を通じ「カスケード方式」の研修体制がほぼ確立され、今後、当初目的である学校レベルでの校内研修の定着をいかに図っていくかの課題とともに、実践的な理数科教育を通して、中学・高校卒業生の雇用対策を考慮していくことが課題として浮上してきた。

今後、本件協力に連係した青年海外協力隊（Japan Overseas Cooperation Volunteers：JOCV）の派遣や、情報技術（Information Technology：IT）支援の可能性を検討しつつ、本件協力の進め方の最終段階を検討することが重要な課題になっている。

本件調査は本件協力期間の終了にあたり、これまでの事業実施の効率性、目標達成度、インパクト、計画の妥当性、自立発展性等の項目につきJPCM（JICA Project Cycle Management）手法を用いた評価を実施するものである。

1－2　終了時評価の基本方針

本件プロジェクト開始に際して先方政府と合意した内容（R／D、M／M）及びプロジェクト・デザイン・マトリックス（Project Design Matrix：PDM）を基に、評価5項目（①妥当性、②有効性、③効率性、④インパクト、⑤自立発展性）に従って評価を実施する。

(1) 終了時評価用のPDM（PDMe）を作成し、（今回はプロジェクト・ロジック・マトリックス（Project Logic Matrix：PLM））、事前に評価項目・視点を設定する。

(2) 整理された資料を基に本邦から調査団を派遣し、次の調査を行う。

1) 日本側のプロジェクト関係者からの聞き取り調査

2) 現地でのカウンターパート、ワークショップ参加者等先方関係機関・関係者からの聞き取り調査

3) フィールドサイト（ワークショップ実施校等）への視察を通じた関係者からの聞き取り調査

4) 上記の過程を経て収集した情報を分析し、評価5項目の観点からの評価を実施する。あわせて、これまでの活動成果の今後の活用や、新たな課題への応用等につき、南アフリカ共

和国（以下「南アフリカ」と記す）側に提言する。

5）日本側調査団と南アフリカ側カウンターパート（ムプマランガ州教育省）及び関係機関（プレトリア大学）による協議により、評価結果を共有する（コメントがあれば取り付ける）。

(3) 調査団は帰国後、報告会を開催し、調査結果を発表するとともに、評価報告書を作成する。

1－3　プロジェクトの背景

南アフリカでは、アパルトヘイト期において黒人層に対して十分な教育機会が与えられず、アパルトヘイトが撤廃された今日も、白人との教育機会・質の不均等が問題となっている。特に、理数科分野においては、黒人層には意図的に不十分な教育が行われてきたこともあり、現在のアフリカ人理数科教員のなかには、十分な知識・指導技術をもたないものが少なくない。こうした状況に対し、1994年5月のマンデラ政権／国民統合政府の発足以来、1999年のムベキ大統領就任以後も継続して、政府は一貫して基礎教育を重視する政策を実施してきた。

旧ホームランドを多く抱えるムプマランガ州においては、他州と比べその教育レベルは低く、とりわけ教員のレベルアップが課題となっていた。この背景には、新政権移行時点で、質は低くとも総数では過剰であった教員の新規養成を控えたことにより、既存の低資格教員の再教育が必須の課題であったことがあげられる。さらに、同州においては、教育環境及び全国統一試験の成績が特に悪いとされた4州のうちの1つであり、州政府をあげて教育環境整備に取り組む必要があった。

かかる状況において、新カリキュラムの導入に伴い、教員のレベルアップが緊急の課題となった同州では、1996年より英国国際開発省（Department for International Development：DFID）の支援により、英語、算数、理科を指導する小学校高学年教員に対するプロジェクトが実施された。日本政府は英国とともに、同州の教員センター建設・改修に支援を行ってきたが、それに引き続き、中等理数科教員に対するレベルアップのためのプロジェクトへの支援が同州から要請された。これはアパルトヘイト下における白人政府の、黒人層への理数科教育の意図的な軽視が背景にあり、かつ理数科教育支援が日本側の得意分野であることとも合致したため実現したものである。

1－4　プロジェクトの概要

1－4－1　形成過程

本案件の端緒は1996年7～8月に実施された「南アフリカ基礎教育プロジェクト形成調査」にさかのぼる。当時既にムプマランガ州初等理数科教員再訓練プロジェクト（Mpumalanga Primary Science Initiative：MPSI）を実施していた英国旧ODAは、MPSIにおける日本との協調を容認している。しかしながら同時に、ムプマランガ州教育省は当時から計画が先行し、実施が伴っていなかったムプマランガ州中等理数科教員再訓練プロジェクト（Mpumalanga Secondary Science Initiative：MSSI）への協力も日本に要請している。

この後1997年に派遣された企画調査員（教育分野）も本件をフォローし、ム州教育省との協議を通して先方のニーズや協力方針の具体化に努めた。1998年には短期専門家（初中等教育）が派遣され、その際にもム州教育省から日本の協力への期待が表明され、1998年11月の国別特設研修第1回「理数科教員養成」開始につながった。

1999年2月には旧文部省による調査団も派遣され、専門的・客観的な見地から本案件の枠組みを検討した。

1999年4月に又地淳初代プロジェクト調整専門家が派遣され、現地関係者との綿密な調整を重ね、同年8月の「協力計画策定」調査団によるベースライン・サーベイをもって、最終的な枠組みの決定を行った。

「協力計画策定」調査団による調査結果と本案件の特徴づけは以下のとおり。

(1) 調査結果

1) ム州の多くの教員が、基本的な教科内容理解の面で問題がある
2) プレトリア大学のMSSIへの参加（事業協力者の位置づけ）
3) 前期中等部（Grade 8,9）を対象とし、州内約540校を活動に参加させる
4) 10月の本邦研修以後、現地でのワークショップ実施というサイクルを確立した

(2) 特徴づけ

1) パイロット地区を設定せず、プロジェクト開始時から州内全中学校を対象
2) 自立発展性への配慮として、州政府の通常業務に取り込んだこと、現地の大学をパートナーとして参加させたこと、段階的に先方経費負担の割合を増加させるよう計画したことがあげられる
3) 現地側による適正技術開発に配慮し、本邦研修、専門家派遣等で日本の経験を提供し、現地関係者自身に自らに役立つものを取捨選択・再構築させるような枠組みを策定した
4) カスケード方式を採用するが、伝達する内容を最小限にし、かつモニタリングシステムを確立させることをめざした

1－4－2　案件概要

付属資料1参照

1－4－3　実施体制

付属資料2参照

1－4－4　実施状況

前項の活動年表の記載に加え、JICA 南アフリカ事務所から年2回の MSSI ステアリング・コミッティーに出席する等後方支援を行っている。

第2章　PCM手法による評価

2－1　評価調査の概要

(1) 調査団の構成と調査期間

終了時評価調査団の構成は以下のとおりである。

総括・団長	村田敏雄	国際協力事業団国際協力専門員
援助（協力）手法	長尾眞文	広島大学教育開発国際協力研究センター教授
協力評価	門脇　聡	国際協力事業団　アフリカ・中東・欧州部職員
プロジェクト評価	東野英昭	株式会社レックス・インターナショナル
外部評価	Dr. Zenda Ofir	Consultant, Evaluation Networks

終了時評価期間は、2002年6月16日から7月20日まで実施された。なお、調査団本体の南アフリカ滞在は7月2日より同月13日までである。

2－2　評価の方法

(1) 評価用PLMとPDM

通常、JPCM手法による評価は、評価用PDMを用いて実施される。評価チームは、既存のPDM（MSSIの場合、1999年12月作成のPDM0）を基にしてプロジェクトの内容変更、外部環境の変化などを確認しながら、評価用PDMを作成する。評価用PDMは、評価実施者がプロジェクトの業績を確認し、評価調査項目を検討する際のベースとなるものである。しかし、今回の評価には、PDMの形式を変更して、評価用PLMを用いることにした。PLMは、資料2に示すように、プロジェクトのコンポーネント（上位目標、プロジェクト目標、成果、活動など）を横軸に展開して示し、それぞれの実績をその横に記述する形式となっている。PDMにおける「プロジェクトの要約」と評価グリッドをまとめて表せる形となっているのが特徴である。今回、PLMを使用した理由は以下のとおりである。

1) 本案件は、プロジェクトの概要で述べたように、国別特設研修、個別専門家のチーム派遣、草の根無償など、複数のスキームが組み合わされており、プログラムとして実施されており、PDMとしてまとめるのに一部なじまない点があるが、PLMでは、この部分がうまく表現できる。

2) 実際の評価作業は、特に現地調査期間内は、評価用PDMを基にして調査を実施し、データを収集し、別途作成した達成グリッド、評価グリッドを完成させることが主体となる。複数のスキームが含まれている本件の評価業務では、その分作業量も増大し、限られた調査期間内での対応が難しいと予想された。PLMは、両者をまとめて表す形式であり、作業の

効率化が期待できる。

(2) 評価用 PLM

オリジナルの PDM 以降 PDM0 と表記) は、1999 年 12 月に作成されている。今回の PLM 作成に際し、以下の点を調査団として変更し、南アフリカ入り後、7 月 4 日に行われたプロジェクト関係者との打合せの席上で合意を得た。以下に主な変更点について述べる。

1) プロジェクト目標と上位目標の整理

PDM0 で 2 つ設定されていたプロジェクト目標について、内容を検討して 1 つに絞り、他方を上位目標として加えた。

2) 指標の見直しと設定

現場の状況を完全には把握できないため、調査団員による本邦での指標見直し作業には限界があったが、PDM に示された指標を見直し、評価用に、できるだけ具体的な内容に書き改めた。

3) Teachers Trainer などの表現は、習慣的に使用されているものの、教育省のなかでの位置づけが不明確であったので、地区教育長 (District Education Manager : DEM) 及び指導主事 (Curriculum Implementer : CI) に変更する等の変更を行った。

4) PDM 欄外のプロジェクト対象地域、ターゲットグループなどを明記した。

(3) 評価 5 項目について

以下、評価 5 項目について、JPCM における定義を示す。

妥当性

援助国のニーズとの整合性はあるか、ターゲットグループの選定の適切さ、開発政策と一致しているか、また、日本の援助事業としての妥当性はあるかどうかを検討する。

有効性

プロジェクトの実施により、期待される効果が得られたか、プロジェクトは有効であったと言えるかを、プロジェクト目標の達成度合い、成果の貢献度合い、外部条件の影響も含めて検討する。

効率性

効率性とは、実施過程における生産性のことであり、「投入」に見合った「成果」が達成されているかどうか、並びに、投入された資源の質、量、手段、方法、時期の適切度を検討する。

インパクト

プロジェクト実施による、間接的・波及的効果はあったかどうか、上位目標の達成度合い

は期待されたものであったか、上位目標はプロジェクト目標によって引き起こされた結果かどうかを検討する。

自立発展性

プロジェクトの効果は協力終了後も持続していくかどうかを、政策、経済・財政、組織・制度、技術、社会・文化、環境などの側面から検討する。

(4) 主な調査項目と情報・データ収集方法

主な調査項目は、評価5項目（プロジェクトの効率性、有効性（目標達成度)、インパクト、妥当性、自立発展性）による評価を可能とするために行ったもので、以下のとおりである。

・国別特設研修及び専門家チーム派遣の成果として、PLMに示されたムプマランガ州教育省（Mpumalanga Department of Education：MDE）のスタッフ、特にコーディネートチームへの経験移転の達成度合い
・プロジェクトのモニタリングシステムの構築状況
・CIの能力開発の達成度、活動状況（ワークショップの運営、教材の開発など）
・理科・数学の教科主任（Head of Department：HOD）のワークショップへの出席状況、内容の理解度
・学校レベルでのMSSI活動の浸透度合い、学校関係者（特に校長）の理解
・教員センター（Teachers Center：TC）の利用度合い、投入機材の管理状況
・総合的な見地から、学校ベース現職教員研修（In Service Training：INSET）システム構築の達成度合い
・今後のプロジェクト運営（自立発展性）に関する課題
・波及効果の有無、発現状況（上位目標も含む）

これらの項目について、関係者へのアンケート調査、半構造化インタビュー、並びにHODワークショップ見学を通じて情報の収集、現状の把握を行い、評価を実施した。なお、アンケート調査と聞き取り調査の結果の内容は、付属資料7として示すとおりである。

2－3　調査結果

(1) 現地調査結果

PCM手法に基づく調査による評価の結果は以下のとおりである。

妥当性

MSSIのプロジェクト目標と上位目標は、南アフリカ社会のニーズに対して高い妥当性をもっているものと判断される。教育の充実は、民主政権の樹立以来、南アフリカ社会が最も力を注いでいる課題である。アパルトヘイト以降、民主政権の下で、教育関係の歳出は、

3,180万ランド（1994年）から、5,110万ランド（2000年）へと増大した。その結果、南アフリカは世界でも最高水準の教育投資国家となった。MSSIは、school-based INSETの実施システムの確立を通じて、grade8と9の生徒の理数科の能力を高めること、並びに理数科教師の能力向上を通じて理数科教育の質を高めることを目的とするプロジェクトであり、南アフリカ政府の政策と合致している。さらに、日本の協力についても、理数科教育が日本の得意分野であり、今日の技術立国の根幹を支えてきたものである点から、妥当性の高さを認めることができる。

有効性

プロジェクト目標の進捗度は、比較的短いプロジェクト期間を考慮すると、満足できる水準であると評価できる。School-based INSETに関しては、確実に基礎が築かれつつある。カスケード方式の導入が円滑に進み、機能し始めている。これらは、国別特設研修や、短期専門家との交流等のMSSIの活動を通じて得られた成果であり、特にCIは、プロジェクト開始後の2年半で学校ベースINSETを主体的に運営する能力を身につけたことは、プロジェクト関係者の一致した見解である。また、評価時点で、およそ60%近くのセカンダリー・スクール（540校中313校、60%弱）がプロジェクトに参加しており、その数は、これからも増加する見込みである。また、地域ごとの取り組み状況には格差が見られるが、詳細については、表3－3に示すとおりである。

効率性

効率性は高いものと判断される。MSSIの成果は、現時点でほぼ順当に達成されている。MSSIの主な投入は、国別特設研修、短期専門家のチーム派遣、で得た経験が、研修に派遣されたCIを通じて、実際のワークショップでHODに移転されており、また、短期専門家の派遣時に行われる指導が、更なる成果発言に貢献している度合いが高い。また、本案件の場合、過剰な投入と思われるものはない。草の根無償による機材投入は当初計画からは遅れており、TCの活用がまだ十分ではない点は残るものの、全体として効率性は高いと判断できる。

以下に、日本政府、ム州教育省、プレトリア大学の投入の概要を示す。

日本側投入

1）国別特設研修

2）長期及び短期専門家派遣

3）プレトリア大学研究支援事業

4）TCへの機材供与（草の根無償）

最初の3項目については、量、質、タイミングとしても適切に投入が行われたと判断され

る。評価時点までに52名の研修生受入れ、及び延べ33名の専門家を派遣。

MDE投入

1) 土地と建物

2) 日本人専門家執務室とセクレタリー・サービス

3) MSSIコーディネーター

4) 各地域ごとのCI

5) プロジェクト運営費用

現在20名のCIがMSSI活動に携わっている。MDEの予算負担分は、この3年間で徐々に増加しているということであるが、今後の予算措置についても、注意深く見守る必要がある。

プレトリア大学

1) MSSIコーディネーター

2) 人件費

3) 現状の大学課程のカスタマイズ

プレトリア大学の投入のなかでは、国別特設研修の派遣前ワークショップが、研修生から高く評価されている。理科については、MSSI担当者が任命されたが、数学の担当は、中間レビュー時の要望にもかかわらず依然として任命されていない。

以下に成果の達成状況をまとめる。これらの成果達成状況は、関係者へのインタビュー、HODワークショップの見学、資料の検討を基に行った。なお、以下の文章中、冒頭の（＋）、（－）の記号は、それぞれ、評価として望ましい内容、否定的な内容を示す。

成果1：DEMとCIが日本での研修を通じて、コーディネーターとしての基本的な知識と能力を身につける。

（＋）この2年半で、延べ52人の研修生が派遣された。

（＋）研修生は日本での研修を通じて、中等教育の全体像を把握し、知識を身につけることができた。

（＋）研修において、帰国後のトレーニング計画を作成する過程で、南アフリカの中等教育の課題が把握できて、円滑に業務を開始できた。

（＋）地区日本での研修を通じて、DEMが日本の技術協力に対する理解を深め、MSSI活動への協力・支援体制の構築が進んだ。

成果2：CIがHODをサポートできるようになる。

（＋）“Planning and Running a Workshop”や、“Peer Teacher Learning”などの教材がCIによって作成され、配付されているが、実践的で質の高いものである。

（＋）CIは、HODワークショップを開催し、ワークショップのテーマや内容の理解を助けるアドバイスを与えることができる。

（＋）ワークショップの後で、反省会（Reflection Meeting）が行われており、課題とその対策が話し合われている。

成果3：HODがSchool-based INSETを実施する能力を身につける。

（＋）HODは、見学したワークショップについては、非常に積極的に参加していた。

（＋）多くの学校で、School-based INSETが実施されている。

（－）しかし、School-based INSETの内容について、教育省が十分に把握していない。

成果4：各学校において、School-based INSETに対する理解が深まり好意的な雰囲気が出来上がる。

（＋）各学校でワークショップが、school-policyに基づいて実施されている。

（－）ただし、そのschool-policyは、文書化されていない場合もあり現状の把握ができていない。

（＋）校長は、実施されたSchool-based INSETの内容について報告書を提出することに規則化されており、活動の内容についての理解は深まっている。

成果5：MDEは、MSSIのプロジェクト活動をモニターし、評価できる能力を身につけている。

（＋）MDEのスタッフはモニタリングと評価の意味と重要性を理解していることは、インタビューで確認された。

（－）ただし、実際のモニタリングと結果の分析、フィードバックは十分に行われているとは思われない。管理上の指標の設定も行われていない。

（－）School-based INSETの進捗に関する四半期報告書は、60～70％が回収されているが、当初目標の90％には、届いていない。

成果6：School-based INSETの教材（実験キットなどを含む）が開発されている。

（＋）CIとHODがワークショップの場で、教材を企画、準備する体制が出来ている。

（－）TCは、教材の貸し出しなどの目的を想定しているが、機材供与が遅れているために、貸し出しなどの面で機能が発揮できていない。

（－）教材のなかに、もっと図や絵を増やして、理解しやすいものに工夫する余地がある。

成果7：各学校で、独自の学習プログラムを有している。

（＋）インタビューによれば、各学校で学習プログラムをもっている。ただし、内容ははっきり把握できていない。

成果8：教師が理数科教科に関する深い理解と知識を身につけている。

（＋）ム州の理数科教師が、プレトリア大学の提供している継続教育修了書（Further Di-

ploma in Education：FDE）取得プログラム（期間は3年間）に優先的に登録されている。ただし、資格の認定者が出るのは半年後であり、現在はまだ、成果の判断はできない。

成果9：TCが、MSSI活動に有効に使われる。

（－）現時点では、機材供与も完了しておらず、TCの機能は発揮できていない。

（－）現場の教師からは、TCで、CIから直接指導を受けたい要望があるがスタッフの不足、あるいは交通手段の不備などでTCに行けないなどの問題がある。

（＋）TCが、教師のワークショップとコンピューター知識の習得場として利用されている。

インパクト

複数の正のインパクトが認められる。

プロジェクトは理数科教育での実践を通して、ム州における学校ベースINSETのイメージを高めた。その結果、理数科以外の強化、例えば語学教育の分野でも、学校ベースINSETが実施されるようになった。

また理数科の教員については、従来授業の進め方や教材について同僚に相談したり、第三者からのアドバイスを受けたりする習慣がなかった。しかし、MSSIによる学校ベースINSETへの参加を契機に、教員同士のグループワークが行われるようになり、授業のレベルアップにつながっている。

日本の鳴門教育大学は、広島大学教育開発国際協力研究センターとともにMSSIへの短期専門家派遣を実施している。同大学が、今回、MSSIへの関与を通して、南アフリカ有数の大学であるプレトリア大学と、国際学術交流協定書（International Agreement for Academic Cooperation between the University of Pretoria, South Africa and Naruto University of Education, Japan）に調印したことも、正のインパクトの1つとしてあげられる事項であり、今後の交流の発展が期待される。

また、プレトリア大学は、ダーバンで開かれた学会でMSSIに関する理数科教育研究について発表を行っている。アパルトヘイト時代に、白人系大学として存在していたプレトリア大学が、ム州の中等教育の現場で研究を実施することは、単独のアプローチでは困難であったと思われる。MSSIの活動を介して、プレトリア大学と州教育省の信頼関係が築かれ、研究が実現できたことは、プロジェクトの正のインパクトである。

上位目標、すなわち、「ム州の8年生と9年生の理数科のスキルが向上する」及び「理数科教員が、授業法を改善し、担当科目の深い理解を獲得して、州の理数科教育の質が向上する」であるが、評価調査団は、これらの上位目標の達成には、今後まだ、かなりの時間を要するものと判断する。また、達成を判断するためのデータの取得が今後必要となる。

自立発展性

プロジェクトの自立発展性は、全般的に見て、ほぼ満足できる水準にあると思われる。ただし、中間評価で指摘された、予算措置と人員配置について、データの不備などもあり、はっきりとした改善が見られるとは言い難い。

＊財政面

南アフリカは、大規模な教育予算を確保しており、ム州教育省も、他のアフリカ諸国と比較して、潤沢な予算をもっている。このため、国、あるいは同省の理数科教育に関する政策、方針に大きな変更がない限り、財政面での問題によりプロジェクト活動が滞る可能性は少ないと思われる。

＊組織面

現在まで、50名を超える国別特設研修への派遣が実施された。主にCIから成る研修生は、日本の教育についての全般的な知識を身につけた。さらに日本人専門家とのこれまでの交流を通じて、知識をム州での実際の展開に結びつける能力を身につけており、核となる人材は育成されたものと判断する。ただし、実際のMSSI活動を担う、CIは、必ずしも十分に配属されているわけではなく、学校レベルでの指導は、十分に行えていない。

＊ム州教育省スタッフと学校関係者の意識について

MSSIが3機関の共同事業であるという位置づけのため、ム州教育省のスタッフのプロジェクトへの当事者意識、意欲は、通常のプロ技方式の場合と比較して高いと思われる。日本側の短期専門家もプロジェクト開始時期に比べ、ワークショップへの介入を徐々に少なくし、CIの自主性に任せて運営させている。また、HODワークショップにおける、参加者の学習意欲も非常に高いものであり、非常に集中して課題に取り組んでいる様子が観察できた。

＊パートナー間の信頼関係について

上記に加え、聞き取り調査の結果、日本側プロジェクト関係者と、ム州教育省スタッフの間には、これまでのプロジェクト活動を通じて、信頼関係が構築されているものと判断された。率直なコメントや意見の交換が可能な関係は、プロジェクトの運営管理に必須な要素であり、この良好な関係を通じて、自立発展性の確保ができる体制の構築に期待がもてると思われる。

(2) 結　論

2003年までに、州内の540校すべてを対象にMSSIを実施するためには、少なくとも2003年3月までは、第1フェーズで対応することが望ましく、そのためには、プロジェクト期間の延長が必要である。

プロジェクト目標が、ム州の地域的広がり、学校の数を考慮すると、3年間のプロジェクト期間で達成するには、やや難易度の高いものであったと思われるなか、全体として、MSSI活動規模は順調に拡大しており、現在のところ、州全体の540校のうち、313校が学校ベースINSETに参加している。2年半前にプロジェクトがゼロからスタートしたことを考えると、プロジェクトの進捗については高く評価でき、今後の活動の基礎が築かれたと判断できる。

MSSIは、三者の共同パートナー事業として展開されてきているため、南アフリカ側のオーナーシップも高く、国策との合致などプロジェクト実施の妥当性が高い。

また、カスケード方式の上・中流部分に携わる教育省のコーディネートチーム、CIたちの能力の高さも十分確認できた。したがって、プロジェクトの継続上に大きな課題はないと判断される。

しかし、カスケードの下流部分、すなわち、学校での実施内容・質については、教育省も十分に把握できておらず、また、プレトリア大学の研究でも、浸透についてはまだ不十分だとの見解を示している。さらに、昨今の行政機構見直しのなかで（高等教育強化のために、①FETとGETを分割し、それぞれの教育段階の拡充を図る、②教育地区（District）制から地域（Region）制への移行。）MSSIの実施体制も再検討の必要が生じている。

このためプロジェクト期間を延長し、モニタリングシステムの改善等を中心として、プロジェクト実施体制を再検討することが、今後のプロジェクト活動の質を高め、最終受益者への裨益につながっていくと思われる。

(3) 提　言

1) 共同パートナー間の協力関係の維持

ム州教育省、プレトリア大学、日本政府（JICA）の三者の共同パートナーの枠組みの中で、MSSIは、円滑に成果を上げてきた。今後、プロジェクト目標、上位目標の達成をめざして、このパートナー関係を維持していくことが基本となることは言うまでもない。評価調査団は、ム州教育省とプレトリア大学が、より強い主体性をもって、共同パートナーとしての役割を果たし、プロジェクトの自立発展性の強化に貢献していくことを期待する。

2) ム州教育省、プレトリア大学の予算・人員措置

学校ベースINSETの機能を維持し、規模の拡大を実現していくためには、MSSI活動のために、ム州教育省による適切な予算措置が行われなくてはならない。スタッフ配置については、プレトリア大学の場合、数学分野のアドバイザーの早急な配置が望まれる。教育省については、教員センターへのスタッフの配置を含め、今後のCIの配置の増強が組織強化の一環として必要であろう。

3) MSSIプロジェクトの指標の設定

学校ベースINSETの浸透を確実にするためには、ム州教育省が主体となって、残りのプロジェクト期間内に、学校ベースINSETの実施状況を確実にモニタリングできるシステムを構築する必要がある。このためには、まず、第1段階として、MSSIのコーディネートチームを中心に、プロジェクト関係者が集まり、モニタリングの指標（進捗の目標値）を明確に定めることが必要である。この指標をPDMに明記し、これを管理ツールとして共有することにより、モニタリングの目的、内容がプロジェクト関係者に認識され、進捗の管理が可能となる。

4) プロジェクトモニタリングシステムの構築

上記に関連して、プロジェクトのモニタリングを的確に行うためには、進捗管理の鍵となる情報・データをはっきりと定め、これらの情報の収集、集約、意思決定者への伝達が、適時・適切に行える体制を築くことが必要となる。意思決定者からのフィードバックが、現場に的確に届く機能を組み込むことも必須である。このためには、既存のモニタリングシステムを再点検し、以下の5点を満足できる定期的なモニタリングシステムを残りのプロジェクト期間内に完成させるべきである。

* 収集すべき情報の明確化（指標の設定と連動）
* 情報収集者、収集時期、収集方法
* 情報の集約者、集約時期、集約方法
* 意思決定者と決定の時期
* フィードバックのタイミングとその方法

5) 理数科到達度試験への参加

プロジェクトの上位目標は、通常、プロジェクト実施期間の終盤から終了後に発現するものであり、終了時評価の時点ではまだはっきりと見えない場合もある。しかし、より最終受益者に近く、また広範囲での効果の発現を期待するものであり、ODAプロジェクトの性格上、重要な項目である。

MSSIの場合、インパクトの評価の項でも述べたが、「ム州の8年生と9年生の理数科の理解が向上する」及び「理数科教員が、授業法を改善し、担当科目の深い理解を獲得して、州の理数科教育の質が向上する」の発現度合いを判断するためには、学生と教員の双方の能力の向上を計量する調査を実施しデータを取得することが、最も直接的で有効である。

MSSIでは、開始直後にベースラインサーベイを行っているため、終了時に同様の調査を実施することにより、プロジェクトの開始前と実施後のデータの比較を通して、プロジェクト効果の発現を明確に把握することができる。具体的にはMatriculate試験結果の精査、授業分析及びアンケート調査を実施し、加えて国際的な理数科到達度試験（Third International Mothematics and Science Survey TYPE：TIMSS TYPE）への参加を通してプロジェクト効果の測定を実施するべきである。

第３章　事例研究

３－１　プロジェクトの現況

以下では、第２章の「PDM に基づく評価」では明確に示せなかった現況について概観する。

(1) 実施体制と役割分担

現在の MSSI の実施体制は図３－１のようになっており、「共同パートナー」である三者が各種の活動や投入を通して緊密な関係を維持していることが分かる。

ム州教育省は MSSI の実施主体であり、理科と数学において成果基点教育（Outcomes-Based Education：OBE）に基づき「生徒が達成すべき成果から、教える内容や具体的な学習活動までを現場の教師が考えて実行する」という全く新しい教育方法の開発と普及を行うという役割を担っている。そして、CI ワークショップ（3 回／年）→ HOD ワークショップ（3 回／年）→校内研修（最低１回／月）→授業（毎日）という一連の流れを経て、最終的には教室における質の高い教育の実践が指向されている。

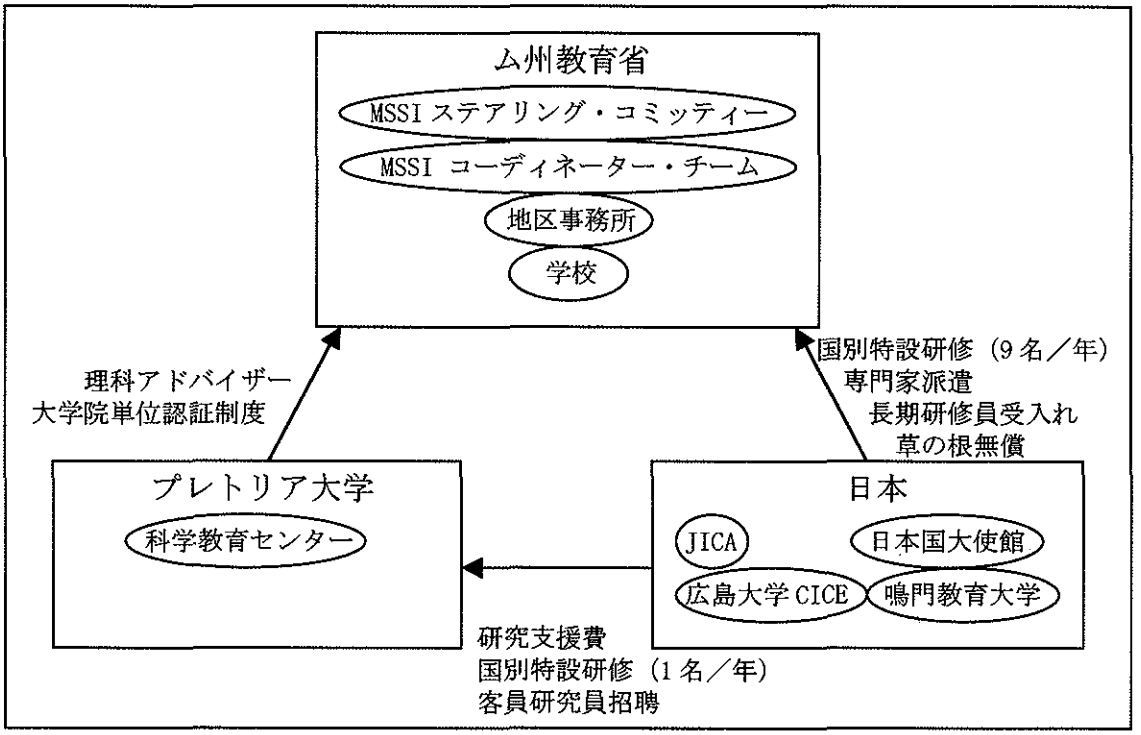

図３－１　MSSI の実施体制と投入の概要

終了時調査においては、各種の会合、インタビュー、アンケートなどから、教育省が高いオーナーシップを有し、教育省幹部の適切な判断、指示、監督を受けて、中心的な役割を担う CI が着実に計画を実行していることが判明した。例えば、HOD ワークショップにおいては、

その運営管理や講義においてCIが主体的にかかわり、HODの積極的な参加を得て、ワークショップが目的に沿って機能していること、これまでに2冊のマニュアルがCIによって作成されており、その完成度と実用性が極めて高いことなどがその証左としてあげられよう（詳細は後述）。以上のような考察から、現段階においてMSSIが教育省幹部をはじめ、CIやHODに認知されており、MSSI実施の中心であるCIが着実に力をつけてきたことにより、一連の活動が順調に実現されていることが分かる。

他方、このような教育省の活動を推進するためのシステム構築に助力し、これまで日本の教育が培ってきた様々な知識や経験を提供し、様々な段階において的確なアドバイスを行い、必要に応じてその活動の実施を支援することがMSSIにおける日本の役割といえる。そのために、国別特設研修と専門家派遣を中心として草の根無償、長期研修員の受入れ、研究支援費の提供など、複数のスキームが有機的に組み合わされている。

今回の調査においては、各種の日本側の投入が適切に行われており、それらを通じて教育省及びプレトリア大学と深い信頼関係が構築されていることを確認した。また、日本が「経験の提供」のコンセプトを重視し、オーバー・プレゼンスにならないように専門家が細心の注意を払って業務にあたっているような印象を受けた。長期専門家をコーディネーター1名に限定しているという仕組みのみならず、短期専門家を含めて個々の専門家が「教育省のサポートに徹する」という明確な意識をもって活動にあたっていた。このような仕組みや専門家の意識が「共同パートナー」との信頼関係の構築に大きく貢献しているように思われる。なお、調査期間中にはプレトリア大学と鳴門教育大学との間に大学間協定が結ばれ、ODAの枠組みを超えた連携も始まろうとしており、MSSIの持続可能性の向上に資するものと期待される。

プレトリア大学は、南アフリカに現存する理数科教育のノウハウや技術を有効に活用しつつ、「日本の経験」の現地化を促進する役割を担っている。このほかにも同大学の大学院単位認証制度を利用してMSSIに参加する教員のインセンティブを高めたり、学術研究として事業成果の分析や蓄積を図るなど、将来的に南アフリカの国内資源だけで事業の実施が可能となるような基礎づくりに主体的な役割を果たすことも期待されている。

現在、プレトリア大学はMSSIを通じて学校で調査を実施したり、各種のワークショップに参加してモニタリングを行うなどの活動を展開している。残念ながら、今のところMSSIのアドバイザーとして協力可能な研究者の不在により、同大学の数学分野への対応が不十分であるものの、学術的な成果として“Curriculum Implementation”に関する論文などが発表されている。ただし、その内容はMSSIというよりは、より大きな枠組みである“Curriculum 2005”の実現に焦点が当てられているとの印象を受けた。今後は教育学部を巻き込んだ形で活動が展開される予定であり、数学アドバイザーの特定に限らず、一層の貢献が求められている。

以上のような実施体制及び各組織と各個人の役割分担は、JICAのこれまでの技術協力にお

いて前例のない先駆的な取り組みである。相手国のニーズ、実施能力、意欲など様々な条件と人種隔離政策の負の遺産（白人と黒人の乖離、黒人への意図的な理数科教育の制限など）を払拭しようという南アフリカが置かれている特殊な状況を勘案しつつ、限られた日本側のリソースを最大限に活用することを目的に構築されたものとして積極的に評価されるべきであろう。また、南アフリカで最初の技術協力プロジェクトであることから、今後同国におけるJICAとしての技術協力のあり方を指し示すという意味でも重要なプロジェクトであると位置づけられる。

(2) HODワークショップ

今回の終了時評価においてMSSIの中心的な活動の1つであるHODワークショップを観察した。HODワークショップは7月8日から11日までの4日間にわたり、Highveld地域（Siyabuswa）とLowveld地域（Lydenburg）の2か所で並行して行われ、終了時評価団は2日ごとに地域を変えて観察にあたった。表3－1はワークショップの概要であり、以下はその考察である。

初の宿泊形式でのHODワークショップということで、会場の選定にはかなり苦労したのではないかと思われるが、Highveld地域での宿泊施設への不満を除くと、おおむね妥当な施設・設備であったと思われる。会場案内が適切に掲示されているなどの配慮も行き届いていた。しかしながら、参加者の増加によりイスが足りなくなったり、ケータリングの準備に一部問題が生じるなどのアクシデントも若干見られた。なお、Highveld地域では交通手段の手配の手違いからか、ある地区からの参加者が全くいないという状況も見られたことから、至急原因究明のうえ、適切な処置が施されることを望みたい。

ワークショップ全体の構成はしっかりしており、若干の変更を除けば、CIを中心に進行はおおむね適切に行われていた。とはいえ、細かな点についてはいくつか問題も見られたことから、観察者が気付いた点について以下に述べる。

オリエンテーションではHODワークショップの目的・成果の説明、スケジュールの確認、注意事項の説明、事務連絡など基本的な事項がきちんと実施されていた。しかし、「講義中は携帯電話のスイッチを切る」といった注意事項はあまり守られていなかったようである。こういった細かなルールの遵守の積み重ねがワークショップそのものの質を高めていくことから、今後の改善が期待される。

Highveld地域の2日目の前日の活動レビュー（Review of Progress）の時間には、本来なら前日の研修内容を振り返り、そのポイントを復習するために設定されているはずだが、宿泊上の問題点が参加者から噴出し、本来の目的を達成できない状況も見られた。今後、宿泊形式で実施する場合の留意点として参加者の不満を真摯に受け止める必要があろう。なお、参

加者からの意見を随時受け付けるために“Information Box（目安箱のようなもの)”を設置するという興味深い取り組みもなされていたが、必ずしも有効に機能していたとはいい難い。

1日の終わりにはCIによる反省会（Reflection Meeting）が設定されており、当日の研修内容の全般的な評価、マネージメントに関する問題点の指摘とその対応策の検討、翌日の準備の確認などがしっかり実施されていた。これを見ると、CIレベルでは情報や問題の共有、日々の反省に基づく活動の改善といった、MSSI開始直後から日本側が期待してきた「新しい組織文化」が着実に形成されてきていることが分かる。このことは、学校ベースINSETの有効性をCI自身が体験しているともいえ、MSSIを推進するうえで非常に重要なポイントであろう。

次に、HODワークショップの中心である教科内容の強化（Content Enrichment）のセッションについて述べたい。その構成や内容は、前年の国別特設研修「理数科教員養成者研修」における準備から始まり、CIワークショップにて現地の学校教育をとりまく様々な現状を考慮したうえでCI間で検討を重ねた結果、完成したものであり、かなり練り上げられているとの印象を受けた。また、CI自身がワークショップ開催の経験がないという「ゼロからの出発」であったことを考えると、既に3年目にして一定水準のワークショップが開催できるようになったことは格段の進歩であり、高く評価したい。しかしながら、より質の高いものをめざすうえで改善しなければならない点も散見されることから、以下に教科内容の強化（Content Enrichment）のセッションを観察して気付いた点を述べる。

セッションの活動を見ると、講義、資料精読のような個人作業、実験を中心とするグループ・ワーク、またグループ・ワークの結果発表を中心とする全体討論、といった活動が配されていたが、実習や実験といった受講者参加型の活動が組み込まれている一方で、依然として一方的な解説に終始する講義形式も多く見られた。しかし、研修であればこそ、これまでにHODが経験したことのないような多様な教育方法を試み、一層の学習者中心の講義、すなわち参加者の意見をもっと引き出すような講義が実施されることを期待したい。そうすることによって、教科に関する知識の向上のみならず、参加者の教育方法に関する知識も向上していくものと思われる。ちなみに、講義形式の活動に関していえば、CIのそれは大学の講義を彷彿させるものであり、HODが十分に内容を理解できているかどうかの確認が不十分だと思われた。事実、HODの間には理解の差が生じており、参加者の増加が見込まれる今後は、こうした問題への対応が脱落者を出さないという意味で非常に重要になってくる。なお、多様な教育方法を身につけるための近道は、できるだけ多くのよい授業を観察することであり、そのためには今後の国別特設研修やCIワークショップにビデオ教材の作成などを組み込むことも一案であろう。

ハンドアウトを中心とする研修教材を見ると、図表が効果的に用いられているものの、参加者のよりよい理解を引き出すとともに想像力を刺激するためには、絵や写真を配するなど

の一層の工夫が必要である。これにより、ハンドアウトは単なる研修教材ではなく、実際に学校に戻ったときに授業で使える教材になる。MSSIの最終的な目的が教室レベルでの質の高い授業の実践であることを考えると、参加者がワークショップで作成した教材（及び教案）をそのまま学校に持ち帰って、直ちに実際の授業に使用できるようになる、そんな工夫が必要である。特に、新ワークショップ・ルールの影響でHODがワークショップ中に「授業案の作成→模擬授業による学校現場での実践→授業研究による授業案の改善」というプロセスを体験することができなくなった今、新たな代替案を考案する必要に迫られている。

セッションでのCIの動きに注目すると、CIが臨機応変にHODの反応に対応しつつ、見事にタイム・マネージメントを行っている様子がうかがえた。また、グループ・ワーク時には机間巡視も適宜実施しており、その都度参加者の反応を見ながらアドバイスを与えていた。ただし、各活動の開始時にCIが活動の目的や到達点を説明する一方で、活動に充てる時間をあらかじめ制限したり、活動の手順を参加者自身に確認させるといった配慮があまりなされておらず、この点は改善が必要である。また、ほとんどのHODはグラフの書き方、温度計やメスシリンダーのメモリの読み方といった基本的な知識が不十分であり、このような点についてはあらかじめハンドアウトに注記しておき、更に活動の直前に注意事項として説明するなどの工夫が必要であろう。また、理科の実験の際に強く感じたのだが、「自ら仮説をたてる」というステップが抜け落ちており、実験としては不十分ではないかと思った。更にいえば、実際に学校で生徒を相手に実験を行うことを前提にすれば、「どのようにすれば適切な仮説を生徒にたてさせることができるのか」といったノウハウを考案しないまま、単なる実験だけを紹介してもあまり効果がないように思える。この点に関しては次回以降、特に注意して取り組む必要があろう。

セッションでのHODの学びに注目すると、時間を経るごとに議論が活発になり、学ぼうとする熱意が感じられた。また、ワークショップを通して集中力を途切らせることがなかった。これはすばらしいの一語に尽きる。しかし、グループ・ワークの際にはグループ内での参加者同士の活発な議論は見られたが、その後の全体討議の場ではグループ間の意見交換がやや低調であったような印象を受けた。また、全体として、グループ・ワーク後のHODによるプレゼンテーションの仕方が不馴れであり、こういった細かいスキルを順次向上させていけるような内容もワークショップに盛り込めればいいと感じた。

なお、1日の活動が終了した後に発生するゴミや机の配置に関して研修修了後にそのまま放置する状況が見られた。翌日のスムーズな開始を念頭にこの点を改善すべきではないだろうか。また、これによりヒドゥン・カリキュラムの存在や、その意図を解説するような内容をワークショップの一環として加えても面白いのではないかと思う。

表３－１：HOD ワークショップの概要

観察項目	理科	数学
研修テーマ	Environment（Life and Living）	Functions and Graphs
研修目的	HOD の教科と教材に対する知識の強化（“Material Development”）	
研修対象者	HOD	
研修内容	1. 地球温暖化／温室効果 （ワークシート、実験） 2. 人口の指数関数的増加の理解と人口増加の人間生活への影響 （シミュレーションゲーム）	1. Chalkboard mathematical instrument ：直線定規、三角定規、コンパス、分度器のセットによる基本作図 2. 関数 3. パンタグラフでの図形の拡大縮小
研修計画	初日　10：00 ～ 11：30　集合／登録 11：30 ～ 13：00　開会／オリエンテーション 13：00 ～ 14：00　昼食 14：00 ～ 16：00　教具（教材）の使用方法の解説と実習／終了 2 日目　8：30 ～ 8：45　前日の活動レビュー（進捗状況の把握） 及び　8：45 ～ 10：30　教科内容の強化（Content Enrichment） 3 日目　10：30 ～ 11：00　休憩 11：00 ～ 13：00　教科内容の強化（Content Enrichment） 13：00 ～ 14：00　昼食 14：00 ～ 16：00　教科内容の強化（Content Enrichment）／終了 4 日目　8：30 ～ 8：45　連絡事項 8：45 ～ 9：45　Peer Teacher Learning（PTL）セッション 9：45 ～ 10：30　教案の作成 10：30 ～ 11：00　休憩 11：00 ～ 12：00　教案の作成 12：00 ～ 13：00　反省・評価／閉会 13：00 ～ 14：00　昼食／解散	
研修教材	ハンドアウト、OHP シート、各種実験器具など	
研修講師	CI 及び短期専門家（数学にて基本作図のみ担当）	
研修予算	ND	ND
研修環境	寄宿制の Ndebele College にて初の宿泊形式での研修。講堂、教室、食堂などは整備されており、インフラ上の問題はない。ただし、参加者からは「宿舎が寒い」とのクレームが多数寄せられた。	寄宿制の Lydenburg Hoerskool にて初の宿泊形式での研修。教室、食堂などは整備されており、インフラ上の問題はない。
準備体制	CI が昨年の国別特設研修「理数科教員養成者研修」における研修の成果を踏まえながら、自国の学校教育の現状を考慮して 4 日間の CI ワークショップにて準備。	

実施状況	【集合／登録】交通手段の手配違いによるものと思われるが、ある地区からの参加者がいないという状況が見られた。また、遠隔地からの参加者が若干遅れた。 【オリエンテーション】ワークショップの目的・成果の説明、スケジュール確認、注意事項の説明、事務連絡などがきちんと行われていた。ただし、「携帯電話の電源を切る」といった注意事項は守られていなかった。 【教具の解説と実習】教具の紹介と使用法の説明及びその実習が主な内容であったが、翌日以降の【教科内容の強化】との関連性が不明確であった。 【教科内容の強化】批判的に考察すれば様々な問題点も見られるが、全体としては CI が中心となって適正かつ計画通どおりに実施され、参加者も集中力を切らすことなく積極的に各活動に参加していた。 【CI による反省会】毎日、ワークショップ終了後に実施され、当日の反省点と改善提案、事務連絡、明日の準備の確認などが行われていた。CI レベルでは、このような活動が既に根付いているとの印象を受けた。 【前日の活動レビュー】２日目の Highveld 地域においては宿泊施設への不満が噴出し、本来の目的を達していなかった。

(3) ガイドブック・シリーズ

CI が中心となり、日本での研修で獲得した知見や CI 間での意見交換を基にガイドブックが作成されている。今のところ“Planning and running a workshop”と“Peer Teacher Learning”の２冊が出版されているが、今後は年間２冊のペースでガイドブックが刊行される予定である。

今回の終了時評価においては、成果物の１つとして認識される上記２冊を対象に簡易なテキスト分析を実施した。結果は表３－２に示したとおりであり、非常に完成度の高いテキストであることが判明した。また、２冊ともテーマの選定、構成、記述内容、形態的特徴のいずれをとっても極めて実用性に優れており、CI が MSSI における自らの役割をきちんと認識し、そのために必要な技能を特定し、自らのことばで記述するという姿勢を貫いていることが分かる。これらのテキストは MSSI のみならず、あらゆる教育プロジェクトに応用可能な内容を包含しており、汎用性も高い。その意味で、他の教育プロジェクトでも使用される可能性が高く、今後のインパクトはかなり大きくなるのではないかと予想される。

なお、このほかにも CI 主導で作成し、プレトリア大学で監修を行う教材集の作成が検討されている。これは、これまでの MSSI の活動を通じて蓄積されてきた授業案と教材を収集・整理・分析して教材集を作成するというものであり、広く一般に活用を促すことによって授業の質の改善に結びつけていくことがめざされている。教材集が、上記のガイドブック同様、実践的なものになることを期待したい。

表３－２　MSSIガイドブック分析表（チェック・リスト）

分析項目	詳細	Planning and running a workshop	Peer Teacher Learning
使用目的と使用法	目的は明示されているか	○	○
	目的はプロジェクトに合っているか	○	○
	使用方法は明示されているか	○	○
	使用方法は分かりやすいか	○	○
	使用方法に誤りはないか	○	○
構成	章立ては適切か	○	○
	章構成は適切な順になっているか	○	○
	Plan-Do-See の構成になっているか	○	○
	時間数との関係は適切か	－	－
	参考／関連文献は明示されているか	○	○
表現と用語の運用	表記に誤りはないか	○	○
	用語は適切か	○	○
	表現は簡潔か	○	○
	表現は適切か（差別表現等）	○	○
	専門用語はできるだけ少ないか	○	○
内容の適切さ	内容の分量は適当か	○	○
	目的と内容が合っているか	○	○
	内容は具体的か	○	○
	説明は簡潔か	○	○
	説明は十分か	○	×
	説明は適切か	○	○
	事例はあるか	○	○
	事例は適切か	○	○
	挿し絵や図表はあるか	○	○
	挿し絵や図表の分量は適当か	○	○
	挿し絵や図表は適切か	○	○
	ジェンダーの要素はあるか	－	－
使い易さ	目次はあるか	○	○
	文字の大きさは適切か	○	○
	文字間の間隔は適切か	○	×
	ページ構成は見やすいか	○	×
	読者自身の工夫の余地はあるか	○	○
	今後、自主学習が可能か	○	○
	持ち運びは簡単か	○	○
その他	付属資料は十分か	○	○
	その他の対象者への配慮はあるか	○	○

※　各項目を満たすものには○を、満たしていないものについては×を記した。

3－2　MSSIの特徴

第2章で見てきたとおり、MSSIは現在順調な歩みを続けている。では、その成功の要因は何であろうか。以下のPDMに基づく評価では、必ずしも明確に把握できない要因について、関係者へのインタビューや関連の報告書等を参考にしながら、特に注目すべき事項について若干の考察を試みたい。

MSSIは、1999年2月に文部科学省と広島大学教育開発国際協力研究センターが中心となって行った調査と、同年8月にJICAが短期専門家チームを派遣し、1か月間にわたって実施した事前調査の結果を基に形成された。それらの調査は関係者とのミーティング、キー・インフォーマントへのインタビューやアンケート、CIへのテスト、学校での授業観察など多岐にわたり、調査を通じてMSSIの対象となる地域・学年・研修対象者の決定、研修ニーズとレベルの把握、日本側の重点協力分野の特定、ム州教育省の負担の可否の特定、顕在的ないし潜在的なプロジェクト実施上の障害の洗い出しなどが行われた。事前調査の際には、1997年からMPSIを展開していたDFIDとの意見交換に多くの時間が充てられ[1]、ム州教育省の意向に加えてDFIDの経験から学んだ事柄にも留意しつつ、案件が形成された経緯がある。また、これとは別にこれまでの日本による理数科教育援助関連事例の検討もなされた。それら一連の詳細な事前調査と類似プロジェクトの経験の分析の結果に基づいて形成されたのが本件協力であり、以下の3点が主な特徴としてあげられる[2]。

(1) 地区のCIを重点対象にして研修やワークショップを行い、最終的には各学校の教科主任が自主的に校内研修を実施するまでになるカスケード方式を採用・実施する。その際、モニタリング活動を重視し、「上から下」へのインプットとともに「下から上」へのフィードバックが可能となるようシステムを構築する。

(2) プロジェクト終了後の持続可能性を念頭に置きつつ、実施主体をム州教育省、協力主体をJICA及びプレトリア大学（現地の旧白人系大学）とし、三者が共同パートナーとしてMSSI実施にあたる。

(3) 日本側は「経験の提供」に重点を置きながら、本邦における研修員受入れを中心に現地でのワークショップ、専門家派遣、機材供与を組み合わせ、各スキームを有機的に投入する。南アフリカ側は日本の経験から役に立つと思われるところを取捨選択し、主体的に適正技術を開発し、その普及に努める。

以下では、このような特徴を形作ると同時にMSSI成功の要因と考えられる事項について、今回

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[1] 「教育分野における新たな技術協力モデル構築の試み　－南アフリカ・ムプマランガ州中等理数科教員再訓練プロジェクトから－」国際教育協力論集 第5巻第1号（2002）pp.83-100、長尾眞文・又地淳

[2] 「南アフリカ・ムプマランガ州中等理数科現職教員研修システム構築プロジェクト」（又地淳　元専門家帰国報告会資料）及び「事例フォーマット（案）『ムプマランガ州中等理数科教員再訓練計画』」（又地淳　ジュニア専門員作成資料）より作成。

の終了時評価時に得た各種の情報を基に考察を加える。

3－3　MSSI成功の要因

(1)「カスケード方式」の弱点の克服

カスケードの段階を経るほど、効果が弱まり、活動のモニタリングも困難になることが、一般にカスケード方式がうまくいかない原因だと考えられている。そこで、MSSIではワークショップで伝える最小限の情報を定め、理念的・理論的ではなく、実践的な内容を教材という形で提示するという工夫がなされた。これにより、段階を経ても必要最小限の情報は保持されているという効果が期待されている。

しかしながら、この方式では各段階のワークショップ参加者の内容の理解度を測定することが困難であるため、各段階での活動状況を本人及び州教育省が把握し、その結果をプロジェクト運営にフィードバックするシステム（「又地フォーマット」を用いたモニタリング・システム）が構築された。すなわち、「上から下」の情報の流れとともに「下から上」への流れを作るという工夫が行われたのである。現段階では、このモニタリング・システムが正常に機能しているのは一部地域に限られており、今後、モニタリング・システムの重要性に対する理解の向上、CIを中心とするマンパワーの増強、各学校への物理的なアクセスの向上などが求められる。

さらに、上からの情報伝達を中心に据えず、参加者同士による「シェアリング（分かち合い）」と「グループ意識醸成」を重視した活動、すなわちグループ活動、日々の振り返り活動の定例化などが取り入れられた。このような「水平方向（横）」の情報の流れを作り出したことにより、従来希薄だった参加者同士の横のつながりが構築されたことは、一般に大きな成果として認識されている。しかし、既存の知識・経験の共有による改善や、日々の反省に基づく活動の改善については、今のところCIレベルでとどまっており、学校においてそれらの効果が発現しているのは、一部のプロジェクト開始直後からの参加校にとどまっている。CIは既に自分たちの行動によって、活動内容の改善が図られることを実体験しており、それらの蓄積を通じて「新しい組織文化」を教育省に内在化させることに成功している。さらに、短期専門家の考察によれば、CIは専門家集団と化しつつあり、活動に自覚と安定感が出てくるまでになってきている[3)]。今後は、MSSI対象校が増加するなか、HODを中心に学校レベルで同様の組織文化が形成されるよう、更なる工夫が必要とされている。

なお、現地に常駐していた専門家は、これまで「現地側から日本側に対する率直な不満が

3)「南アフリカ共和国ムプマランガ州中等理数科教員再訓練計画　2002年　第2回地区レベル・ワークショップ　MSSI短期専門家派遣　報告書（案）」短期専門家チーム／現地駐在専門家、2002.7.

入ってくるような関係作りを心がけた」と述べており[4]、各カスケードの段階を自由に巡り、一種の「潤滑油」の役割を果たしてきたこともMSSIの成功に少なからず貢献しているものと思われる。

<table>
<tr><th>レベル</th><th>ワークショップの流れ</th><th colspan="3">モニタリングの流れ</th></tr>
<tr><td rowspan="2">州</td><td rowspan="2">MSSIコーディネーターチーム
↓　↓　↓
指導主事1⇔指導主事2⇔…</td><td>運営委員会</td><td></td><td>←</td></tr>
<tr><td>MSSI コーディネーターチーム</td><td></td><td>州全体の校内研修活動報告のまとめ（2回／年）</td></tr>
<tr><td rowspan="2">地区</td><td rowspan="2">指導主事1
↓　↓　↓
教科主任1⇔教科主任2⇔…</td><td>教育地区長</td><td colspan="2">コメント・署名　→　↑</td></tr>
<tr><td>指導主事（CI）</td><td>CIによる学校訪問記録（訪問ごと）　→</td><td>各地区の校内研修活動四半期報告のまとめ（4回／年）</td></tr>
<tr><td rowspan="2">学校</td><td rowspan="2">教科主任1
↓　↓　↓
教員1⇔教員2⇔教員3⇔…</td><td>学校長</td><td colspan="2">コメント・署名　→　↑</td></tr>
<tr><td>教科主任（HOD）</td><td>校内研修記録（研修ごと）　→</td><td>校内研修活動四半期報告（4回／年）</td></tr>
<tr><td>教室</td><td>教員1
↓　↓　↓
生徒1⇔生徒2⇔生徒3⇔…</td><td colspan="3"></td></tr>
</table>

出典：「教育分野における新たな技術協力モデル構築の試み　－南アフリカ・ムプマランガ州中等理数科教員再訓練プロジェクトから－」国際教育協力論集 第5巻第1号(2002) 長尾眞文・又地淳（一部改）

図3－2　MSSIのワークショップとモニタリングの流れ

(2) 学校ベースの活動の重視

DFIDのMPSIの主要活動であるワークショップの対象が一般教員のみであったことから、プロジェクトの裨益効果（教材、方法、スキル）が、一部の教員だけにとどまり、広がらないといった問題が指摘されていた。そのため、MSSIでは教師「個人」ではなく、学校という「組織」へのアプローチを重視した形になっている。具体的には、学校ベースの活動を重視し、一般教員ではなく、組織の責任者である教科主任をワークショップの対象者としたのである。さらに、学校長もワークショップに参加させ、各学校での校内研修に責任をもたせるような工夫も行われた。学校長が校内研修に理解を示すことで教科主任は校内でのワークショップをスムーズに実施することが可能となり、一般教員の参加も得られやすくなると考えられる。また、教育省の組織上、地区のCIは学校長よりも低い職位となっているため、学校長の理解が得られなければMSSIの活動自体が阻害されるおそれがあり、その意味でも学校長の同意はMSSIの成否を左右する重要なポイントとして考えられる。

今回の終了時評価が学校の休暇に重なってしまったため、残念ながら実際に学校を訪問して直接学校長や教員に話を聞く機会をほとんど得ることはできなかったが、CIの報告によれば現行のMSSI対象校313校（最終的には州内全校540校が対象）のうち、48校で定期的に、

[4]「事例フォーマット（案）「ムプマランガ州中等理数科教員再訓練計画」」（又地淳　ジュニア専門員作成資料）

87校で時々、学校ベースINSETが実施されている。また、地区のHODや各校のHODへのアンケートやインタビューからは「おおむね校内研修の導入は進んでいる」という回答が得られており、MSSIが比較的順調に展開されている様子がうかがえる。

表3－3　MSSI参加校と学校ベースINSET実施状況

地区名	参加学校数			学校ベースINSET実施状況（学校数）			
	2000年	2001年	2002年	定期的実施	時々実施	脱落	その他
Groblersdal	20	30	60	4	12	0	44
Kwamhlanga	11	23	46	6	－	1	39
Moretele	10	20	37	3	25	－	9
Witbank	10	20	55	11	16	1	27
Eerstehoek	－	10	25	2	8	0	15
Hazyview	－	10	20	5	8	0	7
Malelane	－	12	27	10	8	0	9
Nelspruit	－	10	23	0	0	2	21
Ermelo	－	－	10	3	5	－	2
Standerton	－	－	10	4	5	－	1
合計	51	135	313	48	87	4	174

出典：長尾団員（広島大学教授）作成

なお、CIによれば、定期的に学校ベースINSETを実施している学校は、主に「HODのリーダーシップ」「教員の積極的な参加」「学校長による学校運営管理上の強力な支援」という3つの要素がうまく組み合わされており、なかでも「学校長による学校運営管理上の強力な支援」は特に重要な要素として認識されている。

(3) 州全域を対象とするシステム構築

プロジェクト型の技術協力の場合、期間や投入が限られる一方で一定の目標を達成しなければならない。そのため、一般には、一部地区だけを「パイロット地区」として選定し、プロジェクトを実施する傾向が強い。しかしながら、その成果を他の地区へ広げるメカニズムが当初計画に組み込まれていないため、結局「パイロット」地区だけで終わり、他の地域へ広がらないといった問題が散見される。

他方、1994年の民主主義政府の樹立以降、南アフリカにおいては「機会均等」の概念が広く行き渡っており、ム州内において「パイロット地区」を選定したうえでプロジェクトを実施することは困難な状況にあった。

また、先行のDFIDによるパイロット・ベースのプロジェクトが「事業の効果が広く普及しないだけでなく、その便益の集中に対する不満と成果に対する無関心を呼んだ」[5] ことへの反

[5]「教育分野における新たな技術協力モデル構築の試み　－南アフリカ・ムプマランガ州中等理数科教員再訓練プロジェクトから－」国際教育協力論集 第5巻第1号（2002）pp.83-100、長尾眞文・又地淳

省からもム州全域を対象にすることが適切だと判断された。

以上のような背景から「州全域を対象としたシステム構築をめざす」こととなり、パイロット地域を設けず、段階的に全地域・全中等学校をカバーするように計画が立案された。そして、1年目（2000年）には4地区51校にて開始したが、2年目（2001年）には8地区84校が、3年目（2002年）には10地区178校が新たにMSSI対象校に加わり、現在10地区313校に学校ベースINSETが導入されている（カバー率58%）。なお、2003年の3月までには州内の全中学校540校をカバーすることになっている。

第2章で述べたとおり、一般的な技術協力プロジェクトの規模を考えると「野心的な目標」であるように思われるが、現在のところ当初計画に沿った形で対象校が拡大しており、この点は高く評価したい。関係者の不断の努力によることは自明ながら、このほかにも本節で触れている様々な工夫が複合的に作用した結果だと思われ、当初計画が投入と活動をベースにした単なるプロジェクト・デザインにとどまらず、プロジェクトが効率的・効果的に運営されるための仕掛けや仕組みにまで踏み込んでいる点が成果をあげている要因として指摘できよう。

(4) MSSI活動の教育省通常業務への統合

「相手国側のビジョンを明確にさせ、そのビジョンの具現化を手伝うのが日本の役割であり、同時にMSSIはそのビジョンを具現化するための手段となる」——こういった考え方を前面に掲げて協力を実施する場合、MSSIが教育省においてどのような位置づけにあり、何が期待されているのかを教育省自らが明らかにすることが重要である。その意味で、MSSIが教育省の通常業務として組み込まれたことは極めて重要なポイントであり、MSSIの成功に大きく貢献していると思われる。

また、それまでのム州教育省に対する援助を顧みると、プロジェクトが教育省外部（援助機関の専門家、教育NGO職員）の人間が中心になって運営されるため、終了後には主要関係者がいなくなってしまうことから、プロジェクト終了後の持続発展性が低いという問題が指摘される。そのため、MSSIの活動を通常業務の一部とし、従来の命令系統をそのまま使って実施することが計画された。このことは、対象地域をム州全土にすることと整合性がとれており、MSSIを教育省の事業として根付かせることに相乗的な効果をもたらしているものと考えられる。その証左として、今回の終了時評価に実施した教育省の複数の行政官へのインタビューによれば、少なくとも地区のCI以上の行政官はプロジェクトを自分たちのものとしてとらえていることが判明しており、実施主体としての高いオーナーシップが確認されている。

以上に加えて、プロジェクト実施中は運営費のほとんどが外部機関によって負担されるために州が運営費を負担する体制が構築されず、持続発展性が低いといった問題も指摘されて

いた。これを受けて、プロジェクト活動を教育省の通常業務に統合することで、段階的にワークショップ運営費を州教育省が負担する仕組みをつくり、終了後も南アフリカ国内の資源だけで持続可能になるよう配慮されている。このような仕組みは他国における同様のプロジェクトでも構築されているが、いまだ日本側の投入が多いとはいえ比較的順調にプロジェクトへの州教育省の予算が漸増しており、この点は高く評価できよう。

他方、MSSIの通常業務への統合が教育省の新たな動きによって直接的な影響を受けやすいという点に留意する必要がある。例えば、地域制の導入を柱とする教育行政組織の再編はMSSIの実施体制そのものの見直しを迫る可能性があり、授業時間中に研修に参加することを禁じた新ワークショップ・ルールは活動のあり方を根本から考え直さなければならない契機になっている。MSSIの今後を左右しかねない動きが教育省内部から起きており、それらへの早急な対応が迫られるなか、パートナーが知恵を出し合って最善の策を考案する必要に迫られている。

(5) パートナーとしての現地大学の主体的参加

南アフリカの既存のノウハウ・スキル・経験を積極的に活用すると同時に、日本の経験の現地化を学術的見地からサポートしてもらう目的で、現地の大学（旧白人系大学プレトリア大学）をパートナーとしてプロジェクトに引き込み、今では（数学分野を除いて）その主体的な参加を実現している。大学側はプロジェクトのモニタリングを通じてその経験を取りまとめると同時に、学術論文の執筆や発表を通じて、そのノウハウの確立やMSSIの広報に貢献している。また、日本での国別特設研修の参加予定者に対する事前研修、同大の教育課程への行政官の受入れなども行っており、実質的なパートナーとして機能し始めている。

従来からJICAにおいては現地の大学にプロジェクトを通じて得られた知識や経験を蓄積し、それらを当該国において最適と思われる形に改善する、さらにはプロジェクト終了後にイニシアティブをとって、事業の継続にあたらせるといった試みがなされている。しかし、多くの場合はプロジェクト終了後に、その機能をそのまま大学に肩代わりさせることが多く、プロジェクト開始当初から「共同パートナー」として責任を明確にさせるといったアプローチは例を見ないのではないだろうか。少なくとも教育分野では初めての試みであり、注目すべき事柄である。

なお、今回実施した大学関係者の聴き取りでは「これまでの歴史的経緯や現在の社会情勢を考えると、普通なら白人が黒人の学校を訪問して調査を行うことは不可能であるが、我々はMSSIのおかげでそれが可能になっている」とのコメントを得ており、MSSIが大学側にもインセンティブを与えていることが分かる。また、MSSIを媒介として旧白人系大学が旧ホームランド（黒人居住区）をフィールドとして実利的な研究を進めている事実は、中立的な立場に

ある日本の協力がアパルトヘイトで隔絶された黒人と白人との融和の促進に一定程度貢献しているととらえることができ、このようなインパクトは援助として正当に評価されるべきであろう。

なお、2002年10月にはプレトリア大学にて全国規模の公開シンポジウムが予定されており、これを機に教育省とプレトリア大学との一層の信頼関係の構築、数学分野へ協力する研究者の任命と教材集の監修・出版を中心とするプレトリア大学側の高次のコミットメントの引き出しが可能となるよう、様々に働きかけていくことが今後の日本の役割として求められている。

(6)「経験提供」の重視

技術協力においては、多くの場合、日本で成功したノウハウがそのままの形で現地に適応し、うまく機能するとは限らない。そのためMSSIでは「経験提供型アプローチ」[6]と称する方法を採用している。これは単に日本で成功した経験・技術を相手国に「移転」するのではなく、日本の「経験」を提供し、現地側関係者自身が自分たちにとって役に立つものを取捨選択、咀嚼し、再構築するというアプローチである。具体的には、国別特設研修枠を全員プロジェクト関係者に絞り、研修内容も翌年の現地研修計画の立案と研修用教材の作成に絞りこみ、研修内容をプロジェクト活動に直結するものだけにした。これにより、南アフリカ側による適正技術の開発が期待されている。また、「経験提供型アプローチ」の採用は、日本側関係者がMSSI実施をサポートする黒衣であり、実施主体はあくまでもム州教育省にあることを徹底する意味でも重要なポイントになっている。日本側関係者はもっぱら選択肢を提示するだけで、プロジェクト運営・実施に係る意思決定は州教育省が行うため、現地側にオーナーシップが醸成されると考えたのである。

今回の終了時評価においては、現地側のオーナーシップが着実に醸成されており、ワークショップの教材やCI作成のガイドブックなどに代表されるとおり、CIが日本の経験や技術を南アフリカの現状に合わせて、うまくアレンジし、その導入を図っていることが確認された。しかしながら、MSSIの活動のなかには従来のような「技術移転型アプローチ」の要素も少なからず存在しており、また、農業など他分野のプロジェクトにおいても「経験提供型アプローチ」の要素が多分に存在する場合も見られることから、「技術移転型」と「経験提供型」という両者のアプローチの明確な区分は、活動内容を見る限りにおいては困難であるとの印象を受けた。もっとも、プロジェクトの方向性として、どちらかのアプローチに重心を置く場合には明確に両者を区分することは可能であり、この意味においてMSSIが「経験提供型アプローチ」を採用していることは明らかである。

[6]「教育分野における新たな技術協力モデル構築の試み　－南アフリカ・ムプマランガ州中等理数科教員再訓練プロジェクトから－」国際教育協力論集 第5巻第1号 (2002) pp.83-100、長尾眞文・又地淳

(7) プログラム・アプローチの採用

既存のODAスキームをム州に集中投下し、それぞれが補完、相乗効果を生むように当初から計画されている。具体的には図3－1に示したとおり、長期・短期専門家派遣、国別特設「理数科教員養成者研修」・「地方教育行政研修」、研究支援、長期研修員、草の根無償といったスキームが組み合わされており、TCのセキュリティ確保の問題で草の根無償の投入時期が多少遅れたことを除けば、今のところ各々の成果が活かし合うような形でスキーム間の連携がうまくとれているように思われる。これは当初計画の実施可能性が高かったこと、日本側の関係者及び関係機関のコーディネーションがきちんと図られていること、南アフリカ側に援助の受入体制が整っており、援助の受容能力が高いことなどが大きく影響していると思われる。

なお、MSSIにおいては各スキームの投入の順番においても戦略性が見られ、それが意図したとおりに発現している点が注目される。例えば、国別特設研修「地方教育行政研修」にあらかじめム州教育省の要職にある幹部職員を招聘し、そのうえでCIを「理数科教員養成者研修」に参加させている。これにより、MSSIの主要関係者は全員が日本の教育状況を体験しているため、彼ら自身で日本の経験を基に議論ができると同時に、MSSIの活動の核となるCIを幹部職員がサポートするという仕組みをつくり上げている。また、MSSIの主要関係者が全員日本で研修を受けていることから、プロジェクト関係者の一体感が醸成されており、MSSI推進の一因ともなっている。

3－4　今後の活動への提言

(1) 2003年3月まで第1フェーズを延長すべきである。

2003年には州内の540校すべてを対象にMSSIが実施される予定であるが、現在のカバー率が58%であることから、目標達成のためにはもう少し時間が必要である。具体的には、通常のサイクルで考えると2002年11月に「理数科教員養成者研修」が実施され、その成果に基づいて南アフリカにて2003年2月にCIワークショップが、2月下旬から3月にかけてHODワークショップが開催される予定であり、ここに至ってようやく540校をカバーすることができるようになる。したがって、少なくとも2003年3月までは第1フェーズで対応することが望ましく、そのためにはプロジェクトの延長が不可欠である。

(2) 第2フェーズを実施すべきである。

これまでのところ、ほぼ順調な歩みを続けているプロジェクトであり、南アフリカ側も様々なレベルでMSSIの効果を実感していることから、日本の協力に対する期待は以前よりも大きくなっている。第1フェーズにて関係者の信頼関係の構築と学校ベースINSETの導入がなさ

れ、MSSI推進の気運が高まっていることから、今が学校ベースINSETの定着を図る好機であると判断する。この機を逃すことなく第2フェーズを立ち上げることは、これまで及び今後の協力の効果を最大限に高めることにもつながると思われる。なお、延長の期間は“Curriculum 2005”の実現という教育政策や、現在の進捗状況から判断して3年間が適当ではないかと思われる。

(3) MSSIの実施体制と実施方法を見直すべきである。

教育省の機構改革、プレトリア大学の組織改編、JOCVの派遣開始など、MSSIをとりまく環境の変化とMSSI対象校の増加への対応に積極的に対応すべく、実施体制を見直す必要があろう。

また、新ワークショップ・ルールへの対応、小規模校を含むMSSI対象校の増加への対応、教員センターの有効活用、モニタリング・システムの活性化、実施体制の見直しなどを受ける形で、実施方法も再検討されるべきである。現在、クラスター・アプローチの採用を含めて既に議論が開始されているが、引き続き関係者の間で活発な議論を展開し、最適な実施方法を見いだすことができるよう関係者の努力に期待したい。

(4) 経験を蓄積し、有効活用できる仕組みを整備すべきである。

既に関係者にはその必要性が認識されているが、これまでMSSIを通じて開発された教材や授業案、あるいは更に教室レベルで改良を重ねたものなどを集中的に管理し、すべての関係者が情報にアクセスでき、しかも実際に授業で活用することが可能となるような仕組みが必要である。既にCIレベルではガイドブック・シリーズが出版・配付され、CIが作成し、プレトリア大学が監修することになっている教材集の出版が検討されるなど、様々な試みがなされている。今後は第2フェーズの中心的な活動としてより包括的な仕組み（例えば「理数科Knowledge Base」の開発など）を考案し、整備していく必要があろう。

(3) 国内外のネットワークを積極的に形成すべきである。

今後の発展的な取り組みとして、ム州と同様の問題を抱える南アフリカの他州や他国、あるいは同様のプロジェクトを実施している国内外の機関とのネットワークを形成し、情報や意見の交換を通じてMSSIをよりよい事業に発展させる取り組みが求められよう。

既に、南アフリカ国内では2002年10月に公開シンポジウムが予定されており、MSSIの積極的な広報を行う好機であると同時に、MSSIの取り組みに対して批判的な考察をしてもらう絶好の機会である。これを機に再度MSSIの活動を見直すことは、更なる飛躍につながるものと思われる。

また、JICAではアフリカの約10か国において理数科分野の協力を展開しており、2001年以降、関係各国のカウンターパートが集まり、情報交換や経験の共有を目的とする「国際ワークショップ」が継続的に開催される予定になっている。こういった機会をうまく利用し、MSSIの一層の発展を模索していくことも重要である。

さらに、日本政府が発表した「成長のための基礎教育イニシアティブ（Basic Education for Growth Initiative：BEGIN）」では「アフリカ教育開発連合（Association for the Development of Education in Africa：ADEA）への参加及び理数科教育の作業部会の設置」が提言されており、その動向に注意しつつ、将来的には作業部会の一員として積極的にアフリカ地域における理数科教育の普及と質の向上に資することも期待される。

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1. 案件概要
2. 活動年表
3. プロジェクト・ロジック・マトリックス
4. 当初の PDM
5. 調査日程
6. 主要面談者リスト
7. Summary Report（先方政府提出用）
8. アンケート結果取りまとめ
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10. 外部評価団員（Dr.Z.Ofir）報告（別冊）

1. 案件概要

平成14年12月1日 現在

個別専門家チーム派遣
アフリカ・中近東・欧

南アフリカ　　ムプマランガ州中等理数科教員再訓練計画

Mpumalanga Secondary Science Initiative

1.R／D等署名日：　平成11年11月15日

2.協力期間：　平成11年11月15日　～　平成15年3月31日

3.ﾌﾟﾛｼﾞｪｸﾄｻｲﾄ：　ムプマランガ州

4.相手国実施機関：　ムプマランガ州教育省

Mpumalanga Department of Education

5.日本側協力機関：　文部科学省、広島大学教育開発国際協力研究センター、鳴門教育大学

6.要請の背景：　当国では、アパルトヘイト期において黒人層に対して充分な教育機会が与えられず、アパルトヘイトが撤廃された今日も、白人との教育機会・質の不均等が問題となっている。特に、理数科分野においては、黒人層には意図的に不充分な教育が行われてきたこともあり、現在のアフリカ人理数科教員の中には、充分な知識・指導技術を持たないものが少なくない。特に旧ホームランドを多く抱える同州においては、他州と比べその教育レベルは低く、教員のレベルアップが課題となっていた。かかる状況において、新カリキュラムの導入にともない、教員のレベルアップが緊急の課題となり、同州では、1996年より英国DFIDの支援により、英語、算数、理科を指導する小学校高学年教員に対するプロジェクトが実施されている。日本政府は、英国とともに、同州の教員センター建設・改修に支援を行ってきたが、それに引き続き、中等理数科教員に対するレベルアップのためのプロジェクトへの支援が同州から要請された。

7.協力目標：　（上位目標）ムプマランガ州の中学生が、質の高い理数科の授業を受けることができる。
（プロジェクト目標）
ムプマランガ州のアフリカ黒人理数科教員の指導力が向上する。
ムプマランガ教育省に、理数科現職教員研修のシステムが構築される。

8.協力活動内容：（調査内容）
1．指導主事（Curriculum Implementor）に対する本邦研修（国別特設研修）。
2．指導主事による学校長（Heads of Department）及び教科主任（Subjects Heads）に対する現地研修（短期専門家によるサポート（専門家チーム派遣））
3．教科主任による一般教員への校内研修（短期専門家によるサポート（専門家チーム派遣））
4．教員センターの活用（草の根無償資金協力による協力）
5．教員研修システムのモニタリング及び日本の教育手法の応用可能性に係る研究（プレトリア大学への研究支援）

9.調査団等派遣：　短期個別専門家による協力計画策定ミッション：H11年8月21日～9月24日
中間レビュー調査：H12年10月
終了時評価調査：H14年6月～7月

10.日本側対応：（主な投入内容）

専門家派遣（長期）	プロジェクト調整専門家
専門家派遣（短期）	実施評価モニタリング専門家、理科及び数学教育専門家、現地ワークショップ・ファシリテーター専門家、
研修員受入	理数科教員養成者、州教育省各地区教育長 長期研修員の受入（鳴門教育大学）
機材供与	実験用機材等（ワークショップのテーマに応じて、専門家携行機材にて適宜対応）

11.他の経済技術協力との関係：　草の根無償による教員センターの建設、関連資機材の供与

12.他国援助機関との連携：　プレトリア大学（本チーム派遣の現地協力機関として、主に技術面からの協力）、英国DfIDにより、英語、理科、算数を担当する小学校教員再訓練計画進行中、カナダCIDAによる小学校低学年教員に対する支援、フィンランドによるコンピューターリテラシー向上・障害児教育支援のためのプロジェクト進行中、米国平和部隊理数科教員（州内の一部地区）等。

13.日本側投入：(1)専門家派遣、研修員受入、機材供与

年度		1998	1999	2000	2001
長期専門家（名）	新規	1	0	1	0
	帰国	0	0	1	0
	継続	0	1	0	1
短期専門家（名）		0	9	13	12
研修員（名）		16	17	17	16
機材供与（百万円）		0	0	0	0

(2)その他諸事業　　研究支援事業（2000年度～2002年度）

14.相手国側投入：(1)予算手当　ワークショップ開催費用等

(2)要員配置　プロジェクト責任者　　１名
現職教員研修コーディネーター　３名
教員トレーナー（理科、数学各地区各１名ずつ）２０名

15.国内支援体制：　国内支援委員会設置（H12年7月10日からチーム派遣終了まで）。これまで00年度に2回、01年度に3回、02年度に1回、の計6回開催した。

16.ｸﾞﾛｰﾊﾞﾙｲｼｭｰとの関係：　教育

17.計画の進捗状況：
・現地研修のための短期専門家を派遣し、１年目の対象４地区にて計３回のワークショップ実施(第１回H12/2/14-3/17,第２回5/1-6-14,第３回8/13-9/26)。２年目の対象新地区及び旧地区の計８地区でワークショップを実施（第１回H12/2/5-3/16、第2回5/7～6/4）。３年目の対象２地区を加え、現在州内１０地区全部でのワークショップを実施中。
・国別特設研修「理数科教員養成者研修」「地方教育行政」を毎年度実施中。
・長期研修員２名（教員トレーナー）を鳴門教育大学大学院修士課程でH12年4月より受入中。研究支援費を活用し、プレトリア大学による日本の教育経験の途上国への適用可能性に係る研究に対する支援を実施中。（H12年度からH15年度まで）

18.課題（課題別指針との関連）：
・開発福祉によるNGOとの協力可能性の検討。
・対象地区の拡大に伴う日本側支援体制の整備。
・モニタリング体制の構築及び質の向上、継続。
・青年海外協力隊を通じた協力の可能性。
・チーム派遣協力終了後の支援のあり方の検討。
・ヨハネスブルグ・サミット等の機会における本件のプレゼンテーション

19.今後の投入計画：
専門家チーム派遣（短期専門家）
2002年第２回CI／地区ワークショップへの短期専門家派遣　2002. 6 ～2002.7実施予定
国特研修「地方教育行政コース」2002.9～2002.10
「理数科教員養成者研修」2002.10～2002.12
長期研修員（１名）を鳴門教育大学にて受入予定（現在2名受入中）
終了時評価調査
調査団派遣　2002.6～2002.7実施済み

2. 活動年表

南アフリカ共和国　「ムプマランガ州中等理数科教員再訓練計画」活動年表

2002年7月31日現在

	本邦での協力活動				現地（南ア・ムプマランガ州）での協力活動		
	期間	活動	人／月	のべ人数	期間	活動	現地業務費（実績：百万円）
96年度	96年7～8月	プロジェクト形成調査（教育分野）	3	2			
97年度	97年5～8月	企画調査員（開発計画／教育分野）	3	1			
	98年1～2月	国別特設研修（教育行政）	6	4			
98年度	98年4～7月	短期専門家（初中等教育）	8	2			
	98年11～12月	国別特設研修（理数科教員養成）	8	8			
	99年1～3月	国別特設研修（教育行政）	14	8			
99年度	99年4月～01年4月	長期専門家（教育プロジェクト調整）	24	1			
99年度第1～第2四半期	99年8～9月	短期専門家（計画総括、理科、数学）	4	4	99年8～9月	現地実施計画協議（ムプマランガ州教育省、プレトリア大学）	2,088
99年度第3四半期	99年11～12月	国別特設研修（理数科教員養成）	10	10			
99年度第4四半期	00年2～3月	国別特設研修（地方教育行政）	7	7			
	00年2～3月	短期専門家（計画総括、理科、数学）	4	5	00年2～3月	CI、HODワークショップ（Groblersdal, Witbank, Moretele, KwaMhlanga各地区）	
00年度	00年9月～03年4月	長期研修員（鳴門教育大学）	31	1	01年1～3月	プレトリア大学研究支援事業契約	3,062
	01年2月～02年11月	長期専門家（教育プロジェクト調整）	22	1			
00年度第1四半期	00年5～6月	短期専門家（総括、理科、数学）	4	4	00年5～6月	CI、HODワークショップ（Groblersdal, Witbank, Moretele, KwaMhlanga各地区）	2,330
00年度第2四半期	00年8～9月	短期専門家（評価、ファシリテーター、理科、数学）	4.5	5	00年8～9月	CI、HODワークショップ（Groblersdal, Witbank, Moretele, KwaMhlanga各地区）	2,054
00年度第3四半期	00年9～10月	国別特設研修（地方教育行政）	7	7			406
	00年10～12月	国別特設研修（理数科教員養成）	15	10			
00年度第4四半期	01年2～3月	短期専門家（評価、理科、数学）	5	4	01年2～3月	CI、HODワークショップ（上記に加えEerstehoek, Hazyview, Malelane, Nelspruit各地区）	1,979
01年度	01年11月～04年3月	長期研修員（鳴門教育大学）	29	1	01年4月～02年3月	プレトリア大学研究支援事業契約	6,485
01年度第1四半期	01年5～6月	短期専門家（評価、ファシリテーター、理科、数学）	4	4	01年5～6月	CI、HODワークショップ（上記に加えEerstehoek, Hazyview, Malelane, Nelspruit各地区）	2,021
01年度第2四半期	01年9～10月	短期専門家（ファシリテーター、理科、数学）	3	4	01年9～10月	CI、HODワークショップ（上記に加えEerstehoek, Hazyview, Malelane, Nelspruit各地区）	2,242
01年度第3四半期	01年10月	中間レビュー調査	1.5	3			737
	01年9～10月	国別特設研修（地方教育行政）	7	7			
	01年10～12月	国別特設研修（理数科教員養成）	13.5	9			
01年度第4四半期	02年2～3月	短期専門家（評価、ファシリテーター、理科、数学）	4	4	02年2～3月	CI、HODワークショップ（上記に加えStanderton, Ermelo各地区）	2,454
02年度					02年4月～03年3月	プレトリア大学研究支援事業契約	5,246
02年度第1～第2四半期	02年6～7月	短期専門家（評価、ファシリテーター、理科、数学）	4.5	5	02年6～7月	CI、HODワークショップ（上記に加えStanderton, Ermelo各地区）	5,748
	02年6～7月	終了時評価調査	3	4			
						現地業務費合計	36,852

3. プロジェクト・ロジック・マトリックス

ANNEX 1: Draft Project Logic Matrix for Mpumalanga Secondary Science Initiative　Project Period：December 1999～November 2002　Target Area: Mpumalanga Province　Target Group: CIs, HOD/SHs and Mathematics and Science Teachers in Mpumalanga Province　Ver. 4.0 Prepared in July 5, 2002

Overall goal			Project Purpose			Outputs			Activities		Input
	Indicators	Accomplishment		Indicators	Accomplishment		Indicators	Accomplishment		Accomplishment	
1. Grade 8 and 9 learners in the Province acquire enhanced skills in mathematics and science	1. Students' achievements improve in TIMSS type Survey conducted at the end of the project in terms of maths/science	Achievement of Overall Goal will be examined at the end of the Project Period based on the TIMSS Type survey.	A school-based in - service training system in the Mpumalanga Province is established.	Mechanism of monitoring and evaluation is established.	The foundation of monitoring and evaluation system is considered to be established at satisfactory level at the time of evaluation based on the comprehensive examination of, 1)Numbers of registered schools for MSSI. 2) budget arrangement. 3) system components (follow-up sytem and procedures, staff assignment, materials, etc. and. 4) the results of questionnaire survey on reaction and satisfaction of the participants including principals, etc.	1.Curriculum Implementers (CIs) have basic knowledge and skill to work as coordinators through the training in Japan	1. Numbers of trainees dispatched 2. Accomplishment in	1. During the last 2.5 years, 30 trainees per year, were dispatched to Japan. 2. According to interview survey to MDE staff, training in Japan is effective to show them a general picture of experience in education in Japan. The planning prepared in the Training enables them to focus on and identify the areas of urgent needs.	1 Conduct CIs' Country-focused Training in Japan 1-1 University of Pretoria organizes a pre-workshop for CIs' Study in Japan 1-2 Dispatch CIs to study and understand Japan's experience in its educational 1-3 Trainees (CIs) study and understand Japan's experience in its educational development 1-4 Trainees(CIs) prepare a program for district level workshops.	1-1. Pre-workshops were conducted three times as scheduled during the last 2.5 years. 1-2. 1-3. 1-4. Since 1999, 10 trainees per year, were dispatched to Japan. The trainees prepared programs for district level workshops as scheduled.	Input1:Country-focused Training Fiscal Year: 1999 / 2000 / 2001 / 2002 Trainees dispatched (*): 10(17) / 10(17) / 10(16) / --- (*) Including Trainees for Education Administration
	2. Percentage of the students who like maths/science increase in TIMSS type survey conducted at the end of the Project	No data was available at the time of evaluation. To be evaluated based on the results of TIMSS Type survey or alternative survey results if available			1) As regards numbers of schools which implemented MSSI activities, increased to 313 school (58.0%) out of 540 provincial schools. Numbers of School: 2000 / 2001 / 2002 Nos. of School Registered: 51 / 135 / 313 Total Nos. of school in the Province: 540 / 540 / 540 Ratio of enrollment: 9.4% / 25.0% / 58.0% In 2001, out of 135 schools, 123 schools(91%), conducted school-based INSET.	2. CIs are capable to support Heads of Department (HODs)/Subject Heads (SHs) in maths/science.	1. CIs demonstrate material development skills 2. CIs can conduct 5-day workshop.	1. Materials with high quality, such as "Planning and running a workshop" and " Peer Teachers Learning "were prepared by CIs. 2. It was confirmed through interviews to MDE staff and observation of workshops at Highveld and Lowveld, that CIs are fully capacitated to help HODs conduct workshops.	2 Capacitate CIs under the guidance of Japanese Experts 2-1 Trainees share experiences and accomplishments obtained through the country-focused training in Japan with CIs from each district (dissemination workshop). 2-2 CIs provide a program on district -level workshops. 2-3 CIs develop a strategy for supporting HODs-SHs to conduct school-based in-service training sessions. 2-4 CIs conduct 5-day workshops in each district. 2-5 CIs visit schools for lesson observation and consultation.	2-1. 2-2. 2-3. 2-4. 2-5.These activities were conducted as scheduled and will continue during the remaining Project period. Eight(8) dissemination workshops were conducted up until now for CIs.	Input 2:MSSI Core Activities (1)Japanese Government 1.Dispatch of Experts L-Term Experts dispatched: 1 / 1 / 1 / 1 S-Term Experts dispatched: 9 / 13 / 12 / 12
2. The quality of teaching in mathematics and science in the Province is improved through educator's enhanced teaching skills and subject knowledge	Results of baseline survey improve at the end of the Project compared to the one at the entry point.	According to interview to MED staff, and Japanese Experts, quality of teaching improved to great extent.			2) As regards budget arrangement of MDE, allocation was smoothly executed so far and it is expected to continue at the movement.	3. HODs/SHs are capacitated to conduct a school - based in -service training session	1. HODs/SHs conduct a school -based in-service training session regularly (once a month or more) 2. HODs/SHs demonstrate coaching skills	1.Through the interviews to MDE staff, it was confirmed that school-based workshop are conducted on a regular basis. 2. Observation of workshops at Highveld and Lowveld, it was confirmed that HODs are capacitated to conduct workshops, however, there is room for improvement.	3 CIs assist HOD/SHs to conduct School-Based In-Service Training Sessions 3-1 HODs/SHs elaborate school-based in-service training plan based on their actual conditions under the assistance of CIs. 3-2 HODs/SHs conduct school-based in-service training sessions	3-1. 3-2.These activities were conducted as scheduled and will be implemented during the remaining Project period. Eight(8) dissemination workshops were conducted up until now for HODs.	2.Actual Cost for UP
					3) System components of MSSI are solidly organized at both three tires, at the level of provincial(CIs and HODs), regional(Circuit Manager and HODs) and districts(HODs/Teachers). In general the components are functional at each level and cooperation among tripartite is also at satisfactory level. Lacking of CI manpower was pointed out by MDE staff. However recruiting to mitigate the shortfall is now under progress. Follow-up activities should be enhanced.	4. Create supportive environment for School-Based In-Service Training in each school	1. Each school conducts school -based in-service training under its school policy. 2. Principals attend the first day of the 5-day workshop	1. Each school conduct workshops based on "policy". However, the policy is not necessarily prepared as a document. 2. Principals give their reports as regards INSET activities in their school .	4 Formulate School Policy on School-Based In-Service Training 4-1 Formulate school policy on school-based in-service training in each school 4-2 Invite Principal to school-based in-service training	4-1. 4-2. In each school, policy was prepared. School principals are invited to workshops on regular basis.	(2)MDE 1.Building and facilities 2.Offices for Japanese experts and secretary support 3.Designation of necessary counterparts Project Manager:1 Coordinator:3
						5. MDE is capacitated to plan , monitor and evaluate project activities	1.MDE staff understands the significance of monitoring and evaluation system 2.The numbers of times Monitoring and Evaluation 3. More than 90%s of Quarterly Progress Report is collected regularly.	1.It was found out through interview to MDE staff, that they understand the significance of monitoring and evaluation system. However the actual monitoring and evaluation is not yet done to a satisfactory level. 2. Reports are required monthly from CIs and quarterly for MSSI activities. 3. Approximately 60-70%s of QuarterlyProgress Reports are collected. However, all reports are available at 5-day workshops.	5 MDE Establishes Monitoring and Evaluation System of School-Based In-Service Training 5-1 Hold a Steering Committee Meeting semi-annually. 5-2 Designated at least two CIs from each district. 5-3 Select appropriate HODs/SHs for a workshop 5-4 CIs collect Quarterly Progress Report from HODs/SHs. 5-5 MSSI Coordinator Team collects a Quarterly Progress Report from CIs. 5-6 MSSI Coordinator Team submits a Monitoring Report to the Steering Committee semi-annually. 5-7 Hold Quarterly Review Meetings with participation of MSSI Coordinator Team and CIs 5-8 MSSI Coordinator Team submits a newsletter quarterly.	5-1. Steering committee meeting was conducted 5 times as scheduled. 5-2-5-7. Most of these activities have been conducted as scheduled. Some are still going on and need improvement. 5-8 Newsletter has been published	4.Designation of at least two teacher trainers in each district Teacher Trainers :20 5. Running cost (3)Pretoria University 1.Designation of MSSI coordinators 2.Personnel Cost 3.Customization of existing courses
					4) Stakeholders at each tier of the system show confidence and satisfaction on the achievement in MSSI activities. However, at the district level, MSSI activities has some room for improvement in terms of quality.	6. Resources for school-based in - service training are developed.	Materials and activities are prepared and managed by	Materials and activities are developed at workshops by both CIs and HODs.	6 Develop resources for School-Based In-Service Training 6-1 CIs learn how to develop learning activities and materials 6-2 CIs develop Training Modules (activities and materials) for HODs/SHs to use in a school -based in-service training session	6-1. 6-2. These activities have been conducted as scheduled.	
						7. Each school is capacitated to develop own learning Programmes.	Each school develops at least one Learning Program each year.	It was confirmed through interview to MDE staff that Each school has one Learning Program.	7 Capacitate each school to develop own Learning Program 7-1 HODs/SHs conduct school-based in-service training sessions with Training Modules 7-2 Each school develop its own Learning Program through school-based in-service training sessions 7-3 Learning program and experiences are shared in a workshop	7-1. 7-2. 7-3. These activities have been conducted as scheduled.	
						8. Educators are equipped with a sound understanding of maths/science subjects.	10%s of educators obtained diploma during the Project Period	At the moment of evaluation, teachers are registered for three years for FDE and therefore, none have yet received diploma.	8 Equip educator with a sound understanding of Maths. Science Subjects 8-1 CIs conduct research on the needs for accreditation programs offer 8-2 UP implements accreditation scheme	Accreditation program was started in 2001 and 120 teachers(including teachers other than maths/science teachers) are registered from schools participating MSSI.	
						9.Teachers Centres (TCs) are utilized effectively by teachers for the Project Activities.	1. TCs are equipped with necessary equipment 2. More teachers come to use TCs for Training Sessions.	1. At the moment of evaluation, equipment has not been installed to TCs. Therefore, TCs are not fully functional yet in as far as 2. Teachers come to TCs for computer accessing and workshops.	9 Equip and Utilize Teacher's Centre 9-1 Identify necessary equipment and apparatus in each Teachers Centre 9-2 Install necessary equipment and apparatus provided 9-3 Set standards on management and security of equipment 9-4 JICA experts conduct training on the utilization of the experimental apparatus	Provision of equipment was delayed due to administrative procedure, and equipment was not installed yet.	Input3:Improvement of TCs (1) Grass-root Aid by Japanese Government Provision of Equipment
						10. School database in each district is created	1. Database has sufficient 2. Database is maintained and updated.	1.Datafile for monitoring and evaluation system were already established. However, most CIs need computer literacy skills. 2.The database is kept at Head Office and updated at thetime new districts join the Project.	10 Capacitate CIs to manage information on Schools and Teachers in their own Districts 10-1 CIs collect information sheets on their respective district 10-2 CIs learn how to use a computer and how to use database 10-3 CIs input school information and develop a database for each district	10-1,10-2,10-3. These activities has been conducted and some are still going on as scheduled.	(2) MDE Land and facilities

Mpumalanga Secondary Science Initiative (MSSI) Project Design Matrix (PDM): Draft 1

Target Group (Beneficiaries) of this project: **Science and Mathematics Teachers in the Province**

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
(Overall Goal) ·To ensure that Grade 8 and 9 learners in the Province acquire enhanced skills in mathematics and science.	(TIMSS: Third International Mathematics and Science Survey) 1. Students' achievements improve in TIMSS-type Survey conducted at the end of the project in maths/science. 2. Percentage of the students who like maths/science increase in TIMSS-type Survey conducted at the end of the project.	1. Results of TIMSS-type survey 2. Results of TIMSS-type survey	
(Project Purpose) 1. To establish a school-based in-service training system in the Mpumalanga Province. 2. To improve the quality of teaching in mathematics and science in the Province by enhancing educators' teaching skills and subject knowledge.	1. Frequency of school-based in-service training and its regularity improves as time goes by. 2. Results of baseline surveys improve at the end of the project compared to the one at the entry point.	1a. Quarterly Progress Report 1b. Observation of school-based in-service sessions 2. Baseline Survey	(Project Purpose to Overall Goal) · MDE personnel involved in the project does not change.
(Outputs) 1-1. MDE (CMD) is capacitated to implement, monitor, and evaluate project activities. 1-2. Teacher Trainers (TTs) are capacitated to develop and support Heads of Department (HODs)/Subject Heads (SHs) in maths/science. 1-3. HODs/SHs are capacitated to conduct a school-based in-service training session.	1-1a. More than 90% of Quarterly Progress Reports are collected regularly. 1-1b. CMD staff draws and modifies PDM. 1-2a TTs demonstrate facilitation skills. 1-2b. TTs demonstrate the understanding of adult learning principles. 1-2c. TTs demonstrate material development skills. 1-2d. TTs can conduct 5-day workshops. 1-3a. HODs/SHs conduct a school-based in-service training session regularly (once a month or more). 1-3b. HODs/SHs demonstrate peer coaching skills.	1-1a. Quarterly Progress Report 1-1b. Updated PDM. 1-2. Observation of workshops and Quarterly Progress Report 1-3a. Quarterly Progress Report 1-3b. Observation of school-based in-service sessions.	(Output to Project Purpose)

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
(Outputs)			(Output to Project Purpose)
1-4. Supportive environment for school-based in-service training in each school is created.	1-4a. Each school formulates school policy for school-based in-service training. 1-4b. Principals mention in-servie training session in a staff meeting.	1-4a. School visit by TTs 1-4b. Interview from teachers	
1-5. Teachers' Centres (TCs) are well equipped and utilized.	1-5a. TCs are equipped with necessary equipment. 1-5b. More teachers come to use TCs.	1-5a. Stocktaking list for each TCs. 1-5b. Visitors list in each TCs.	
1-6. TTs are capacitated to manage information on schools and teachers in their own districts.	1-6a. School database in each district is created. 1-6b. TTs can use software of database (e.g., MS-Access) 1-6c. TTs can explain problems and the causes of each school in their own districts.	1-6. Output List of the schools in each district	
2-1. Resources for school-based in-service training are developed.	2-1. Materials and activities are developed by TTs.	2-1 Materials and activities demonstrated in a workshop.	
2-2. Each school is capacitated to develop own Learning Programmes.	2-2. Each school develops at least one Learning Programmes each year.	2-2. Developed Learning Programmes	
2-3. Educators are equipped with a sound understanding of maths/science subjects.	2-3. Results of the baseline survey conducted at the end of the project improve.	2-3. Baseline Survey	

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
(Activities) 1-1-1. A Steering Committee Meeting is held semiannually. 1-1-2. Teacher Trainers (TTs) are designated at least two from each district. 1-1-3. Appropriate HODs/SHs are selected for a workshop. 1-1-4. TTs collect a Quarterly Progress Report from HODs/SHs. 1-1-5. MSSI Coordinator Team collects a Quarterly Progress Report from TTs. 1-1-6. MSSI Coordinator Team submits a Monitoring Report to the Steering Committee semiannually. 1-1-7. Quarterly Review Meetings between MSSI Coordinator Team and TTs are held. 1-1-8. MSSI Coordinator Team publishes a newsletter quarterly. 1-2-1. TTs study and understand Japan's experience in its educational development. 1-2-2. TTs develop a programme on district-level workshops. 1-2-3. TTs develop strategy for supporting HODs/SHs to conduct school-based in-service training sessions. 1-2-4. TTs conduct 5-day workshops in each district. 1-2-5. TTs visit schools for lesson observation and consultation. 1-2-6. UP organizes a pre-workshop for TTs' Study in Japan. 1-3-1. HODs/SHs elaborate school-based in-service training plan. 1-3-2. HODs/SHs conduct school-based in-service training sessions. 1-4-1. Principals attend the first day of the 5-day workshops. 1-4-2. School policy on school-based in-service training is formulated in each school.			(Activity to Output)

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
(Activities) 1-5-1. Necessary equipment and apparatus are identified in each Teachers' Centre. 1-5-2. Necessary equipment and apparatus are provided. 1-5-3. Standards on management and security of equipment are set. 1-5-4. JICA experts conduct training on the utilization of the experimental appratus. 1-6-1. TTs collect information sheets on their respective districts. 1-6-2. TTs learn how to use a computer and how to use database softwares. 1-6-3. TTs input school inofrmation and develop a database for each district. 2-1-1. TTs learn how to develop learning activities and materials. 2-1-2. TTs develop Training Modules (activities and materials) for HODs/SHs to use in a school-ased in-service training sessions. 2-2-1. HODs/SHs conduct school-based in-service training sessions with Training Modules. 2-2-2. Each school develop its own Learning Programmes through school-based in-service training sessions. 2-2-3. Learning programmes and experiences are shared in a workshop. 2-3-1. TTs conduct research on the needs for accreditation programs offered by University of Pretoria. 2-3-2. UP implements accreditation scheme.			(Activity to Output)

(Inputs)	(Pre-conditions)
(by the Mpumalanga Department of Education) (1) Buildings and facilities (2) Offices for Japanese experts and secretary supports (3) Designation of necessary counterparts (MSSI Coordinators) (4) Designation of at least two teacher trainers in each district (5) Running cost, as necessary and appropriate, from regular budgetary resources for the implementation of C2005 (by the University of Pretoria) (1) Designation of MSSI Coordinators (2) Personnel cost (3) Customization of existing courses (by the Japanese Government) (1) Dispatching a long-term Project Coordinator (2) Dispatching short-term experts (3) Teacher Trainers' study (Country-focussed training) in Japan (4) Equipment and apparatus for Teachers Centres (5) Financial Support (for actual cost) to University of Pretoria	·At least two qualified Teacher Trainers (TT) from each district are designated (who have sufficient conceptual understanding of the subject). ·TTs make time not only for implementing workshops but also for visiting schools and helping teachers. ·Japanese Government financially covers a part of cost necessary for the University of Pretoria for their activities. ·MDE can bear the necessary running cost. ·Qualified HODs/SHs is designated at each school.

5. 調査日程

南アMSSI終了時評価調査団　現地調査行程表

	月日	時間	内容	面談者	調査団参加者	宿泊先
	6月16日 日 から 6月28日 金		長尾団員出発 現地調査（w/s視察、協議等） （専門家チームと共同作業）			
1	6月29日 土		南ア着			プレトリア
		14:00～16:30	南ア事務所との打ち合わせ	木藤所員	K	
2	6月30日 日	15:00～16:30	南ア事務所との打ち合わせ	高橋所長	K	プレトリア
3	7月1日 月	11:00～12:45 PM	南ア事務所・専門家との打ち合わせ 日本側関係者打合せ資料作成	高橋、木藤、上飯坂	K	プレトリア
4	7月2日 火	10:00～12:30 16:00～17:30	日本側関係者全体打ち合わせ 外部評価団員との打ち合わせ	高橋・木藤、短期専門家チーム Dr. Z. Ofir	M, N, K, H M, N, K, H	プレトリア
5	7月3日 水	9:30～10:30 PM	在南ア日本大使館表敬 ネルスプリットへ移動	松井書記官	M, K, H	ネルスプリット
6	7月4日 木	9:00～12:30 16:00～18:00	MDE、UPとの全体協議 MSSI長期専門家へのインタビュー	J. Morai, V. Mkwanazi 上飯坂専門家	M, N, K, H M, K, H	ネルスプリット
7	7月5日 金	10:00～12:30 14:00～16:00 16:00～18:00	団内打ち合わせ MSSI CIへのインタビュー MSSI CIへのインタビュー	 N. Mthetwa J. Mkwanazi	M, N, K, H M, K, H M, K, H	ネルスプリット
8	7月6日 土	10:00～12:30 14:00～16:00	団内打ち合わせ 団内打ち合わせ		M, K, H M, N, K, H	ネルスプリット
9	7月7日 日	10:00～12:30 PM	団内打ち合わせ 資料整理		M, K, H	ネルスプリット
10	7月8日 月	10:00～12:30 14:00～16:00	団内打ち合わせ／w/s視察 団内打ち合わせ／w/s視察		K, H/ M, N K, H/ M, N	ネルスプリット
11	7月9日 火	10:00～12:30 PM 22:30～24:00	団内打ち合わせ／w/s視察 資料・報告書作成 団内打ち合わせ		K, H/ M, N K, H M, K, H	ネルスプリット
12	7月10日 水	AM PM	ワークショップ視察（Lydenburg） 団内打ち合わせ		M, K, H M, K, H	ネルスプリット
13	7月11日 木	AM 14:00～15:30	団内打ち合わせ MDEとの全体協議		M, K, H M, K, H	プレトリア
14	7月12日 金	7:00～8:00 9:00～10:00 10:45～11:45 11:45～13:00 15:00～16:30	UPと打ち合わせ 中央教育省への報告 在南ア　榎　日本大使表敬 資料分析・作成 団内打ち合わせ		M, N, K, H M, N, K, H M, N, K, H K, H	プレトリア
15	7月13日 土		南ア発		M, N, K	
16	7月14日 日		ネルスプリットへ移動		H	
17	7月15日 月		ムプマランガ州教育省インタビュー		H	
18	7月16日 火		学校訪問		H	
19	7月17日 水		学校訪問		H	
20	7月18日 木		プレトリアへ移動・事務所報告		H	
21	7月19日 金		南ア発		H	

※調査団参加者部分略記号：M＝村田、N＝長尾、K＝門脇、H＝東野　各団員

6. 主要面談者リスト

主要面談者リスト

○JICA 南アフリカ共和国事務所

高橋	嘉行	事務所長
木藤	耕一	事務所員
今村	嘉弘	事務所員

○短期専門家チーム

澤村	信英	（総括）	広島大学教育開発国際協力研究センター
服部	勝憲	（数学）	鳴門教育大学学校教育学部
小野	由美子	（研修計画）	鳴門教育大学学校教育学部
小澤	大成	（理科）	鳴門教育大学学校教育学部

○在南アフリカ共和国日本大使館

榎	泰邦	大使
松井	敬一	一等書記官

○National Department of Education

S. Mangena (Mr.)	Deputy Minister
C. Jeppie (Mr.)	Director (International Relations)
D. Fillis (Mr.)	Deputy Director (International Relations)
L. Lepan (Ms.)	Deputy Director (Africa Desk)

○Mpumalanga Department of Education

Timothy. Mashinini (Dr.)	Deputy Director General
Noctula Mthemthwa (Ms.)	Deputy Chief Education Specialist
Mufenkosi Malaza (Mr.)	Chief Education Specialist
Joe Molai (Mr.)	Director, Curriculum
Jan Mkhwanazi (Mr.)	Curriculum Head
T. Mashava (Mr.)	Chief Education Specialist
Vuyiswa Mkhwanazi (Ms.)	Deputy Chief Education Specialist

○University of Pretoria, Joint Centre for Science, Mathematics and Technology Education

Max Braun (Prof.)	Director
John Rogan (Prof.)	Lecturer
Tembi Ndlalane (Ms.)	Lecturer

終了時評価調査　質問票（Questionnaire）回答者

1. JICA専門家（5名）

上飯坂　朗子	長期専門家
澤村　信英	広島大学CICE
服部　勝憲	鳴門教育大学学校教育学部
小野　由美子	鳴門教育大学学校教育学部
小澤　大成	鳴門教育大学学校教育学部

2. MDE Staff（4名）

Joe. M. Morai	Director
Nokuthula Mthethwa	Deputy Chief Education Specialist
Jan Mkhwanazi	Curriculum Head
Vuyiswa Mkhwanazi	Deputy Chief Education Specialist

3. Curriculum Implementer:CI（5名）

Lerato M. Dimba	Witbank District
M. F. Mengwai	Groblersdal District
Riana Venter	Moretele District
Martin Dimba	Witbank District
C. P. Chacko	Groblersdal District

4. Head of Department: HOD（6名）

N. A. Maponya	Groblersdal District
K. M. Mokone	Groblersdal District
M. L. Sithole	Moretele District
N. Z. Dlamini	Nelspruit District
S. G. Sambo	Nelspruit District
V. Francis	Nelspruit District

5. School Teachers　（7名）

L. I. Naude	Nelspruit District
T. T. Manjike	Nelspruit District
M. J. Mabuza	Nelspruit District
M. S. Nkosi	Nelspruit District
T. F. Madonsela	Nelspruit District
G. Nandakumar	Nelspruit District
D. Pillay	Nelspruit District

6. School Principals　（2名）

B. B. Gwambe	Nelspruit District
S. Pillay	Nelspruit District

7. Summary Report (先方政府提出用)

SUMMARY REPORT OF THE FINAL EVALUATION
ON
THE MPUMALANGA SECONDARY SCIENCE INITIATIVE (MSSI)
IN THE REPUBLIC OF SOUTH AFRICA

More than two and a half years have passed since November 1999, when the Mpumalanga Secondary Science Initiative (MSSI, hereinafter referred to as "the Project") started with the tripartite partnership among the Mpumalanga Department of Education (MDE), University of Pretoria (UP) and Japan International Cooperation Agency (JICA).

For the purpose of evaluating the achievements of the Project, the Japanese Evaluation Team ("the Study Team" hereafter), organized by the JICA and headed by Mr. Toshio Murata, visited the Republic of South Africa from June 16, 2002.

During its stay in South Africa, the Study Team visited MDE in Nelspruit, observed the Head of Department (HOD) workshops in Highveld and Lowveld and had discussions and interviews with Japanese experts, MDE officials, curriculum implementers (CIs), UP staff and HODs to confirm the accomplishments of the Project.

This summary report contains the results of the assessment by the Study Team. In parallel with the evaluation by the Study Team, an external evaluator will complete an independent report by the end of August. Both reports will be shared among the partners for comments.

1. OBJECTIVES OF THE EVALUATION

Objectives of the evaluation are to conduct final evaluation of the Project based on the five evaluation criteria of the JICA Project Cycle Management (JPCM) method, and recommendations and suggestions concerning the measures to be taken for the rest of, as well as, after the completion of the Project period would be also given

2. MEMBERS OF THE EVALUATION TEAM

Mr. Toshio MURATA, Leader
Senior Advisor on International Cooperation (Education),
Institute for International Cooperation, JICA

Prof. Masafumi NAGAO, Cooperation Method
Center for the Study of International Cooperation in Education,
Hiroshima University

Mr. Satoshi KADOWAKI, Cooperation Assessment
Staff of Africa Division, Regional Dept. IV, JICA

Mr. Hideaki HIGASHINO, Impact Assessment
Consultant, RECS International Inc.

Dr. Zenda Ofir, External Evaluation
Consultant, Evaluation Networks

3. METHODOLOGY OF EVALUATION

3-1 Evaluation Method

The JPCM evaluation method was used for the evaluation. Prior to the visit to South Africa, the Study Team prepared the Draft Project Logic Matrix (PLM) for evaluation of the Project based on the first Project Design Matrix (PDM) prepared in November 1999, as an attachment to the Minutes of Meeting. The draft PLM, which presented the components of the Project including project purpose, overall goals, outputs, activities, inputs, verifiable indicators, important assumptions, and target group, etc., was endorsed by the representatives of the partners for evaluation with some corrections made at the meeting held on July 4, 2002 in Nelspruit. The details of these components along with the confirmed accomplishments of the Project are shown in the attached PLM as ANNEX 1.

For the evaluation of the Project, the Study Team visited MDE in Nelspruit, observed HOD workshops in Highveld and Lowveld and had discussions and interviews with Japanese experts, MDE officials, CIs, UP staff, and HODs during its stay in South Africa.

3-2 Items of Evaluation

The evaluation was conducted in accordance with five evaluation criteria as shown below:

(1) Relevance

The relevance of the project plan is reviewed as the validity of the project purpose and the overall goal in connection with the development policy of the South African Government, the needs of the beneficiaries and the appropriateness of the logical relationships among the components of different levels in the PLM.

(2) Effectiveness

Effectiveness concerns the extent to which the project purpose in the PLM has been achieved, or is to be achieved, in relation to the outputs produced by the Project.

(3) Efficiency

Efficiency of project implementation was examined with an emphasis on the relationship between outputs and inputs shown in the PLM in terms of timing, quality and quantity.

Impact

Impact is defined as intended and unintended, direct and indirect, positive and negative, and tangible (physical) and intangible (psychological) changes brought about by the Project. It includes its impact on the overall goal in the PLM as intended positive changes.

(4) Impact

Impact is defined as intended and unintended, direct and indirect, positive and negative, and tangible (physical) and intangible (psychological) changes brought about by the Project. It includes its impact on the overall goal in the PLM as intended positive changes.

(5) Sustainability

Sustainability of the Project is assessed in organisational and financial aspects by examining the extent to which the achievement of the Project is sustained or expanded after it is completed.

4. PROJECT BACKGROUND AND SUMMARY

4-1 Project Background

During the era of apartheid in South Africa, blacks were not provided with enough educational opportunities, and even today, with apartheid abolished, the inequality in educational opportunity and quality compared to whites still remains to be a problem. Especially in the natural science fields, inadequate education had been given to blacks deliberately and as a result there are many maths and science education teachers today, who do not possess sufficient knowledge and instructional skills. In face of such reality, the government has consistently implemented policies that emphasize basic education since the establishment of the Mandela Government - the Government of National Unity in May 1994, continuing even after the inauguration of President Mbeki in 1999.

In Mpumalanga province where there are many former homelands, the level of education is low compared to other provinces and the improvement of the quality of teachers has in particular been recognized as a problem. It should be noted that prior to the Project, retraining the existent teachers of inadequate qualifications was an essential task, for the province had refrained from training new teachers since the existent ones were overabundant despite their low quality. Further, having been named one of the worst four provinces on educational environment and the score of the national examination, the provincial government needed to seriously undertake the improvement of its educational environment.

In the province where it had become an urgent task to improve the quality of teachers given those circumstances and the introduction of new curricula, the project for primary school teachers of English, mathematics and science began in 1996 with assistance of DFID of England. The Japanese government with England had been providing assistance on the construction and repair of the teachers' center in the province, and was then requested by the province to assist the project to upgrade the knowledge and skills of secondary school teachers of maths and science. The Project came to reality because in the background there was the white government's deliberate negligence in natural science education for blacks under apartheid, combined with the fact that maths-science educational assistance was the Japanese side's strong suit.

4-2 Project Summary

The Project formulation was based on the results of the study conducted mainly by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and the Center for the Study of International Cooperation in Education (CICE) of Hiroshima University in February of 1999 and the preliminary study conducted by a group of JICA experts over a period of one month in August of the same year. There were various activities during these studies including meetings with those concerned, interviews with and surveys of important informants, tests for CIs, and observations of classroom in session at schools, among others.

Through the studies were made the selection of the Project study areas, grade levels and prospective trainees, the examination of training needs and levels, the determination of the

focus fields by the Japanese side, the decision on cost sharing by MDE, and the identification of obstacles both overt and covert in project implementation. During the process, a considerable amount of time was set aside for the exchange of ideas and opinions with DFID that had been developing the Mpumalanga Primary School Initiative (MPSI) since 1997, and the project took shape reflecting, in addition to the intensions of MDE, matters learned by DFID from its experience.

Further, aside from these, the past cases associated with maths and science educational assistance by Japan were examined.

4-3 Main Features of the Project

Based on the series of detailed preliminary studies and the results of analyses on similar projects, the present cooperation project was formed, and the following three are noted as its main features:

(1) Workshops are held especially for district educational directors, and the so-called "cascade model" is employed and implemented, in which the head teachers of the respective subjects at each school will eventually administer in-service training by themselves. In the course of the development, monitoring activities are emphasized and a system is established, which will allow "bottom-up" feedback along with "top-down" input.

(2) With MDE as implementing body and JICA and the University of Pretoria as cooperative bodies, the three parties implement the Project as collaborative partners, keeping the sustainability after the completion of the project in mind.

(3) Emphasizing the "provision of experiences," the Japanese side combines on-site workshops, dispatch of experts and supply of materials, with the training of key individuals of the South African side in Japan as a core activity, and inputs the respective schemes organically. The South African side screens those that are considered to be useful from the experiences of Japan, develops appropriate technologies voluntarily, and strives to disseminate them.

In order to achieve the project purpose, namely to establish a school-based in-service training system in Mpumalanga province, several different schemes are organically combined, including the Grant Aid for Grassroots Projects with the Country-focused Training Course and the Dispatch of Technical Cooperation Experts, the admission of long-term trainees, and the provision of research grants and funds.

4-4 Midterm Review

In October 2001, the partners conducted a midterm review and shared the following positive views.

(1) All the partners acknowledged the progress made by the Project though it was still in the process of expanding to the remaining two districts in Lowvelt in Mpumalanga province.

(2) A supportive environment had been generated around the Project, including the accreditation of the Project by the Central Government of South Africa and favourable recognition from both educators and learners.

(3) From the two years' experience, the tasks and roles of each stakeholder had been clearly identified, so that each stakeholder was encouraged to continue their tasks confidently.

At the same time, the following tasks were confirmed for each partner.
(1) School-based in-service training should be reinforced with more focus on the sharing and restoring of learning experiences under the workshops.

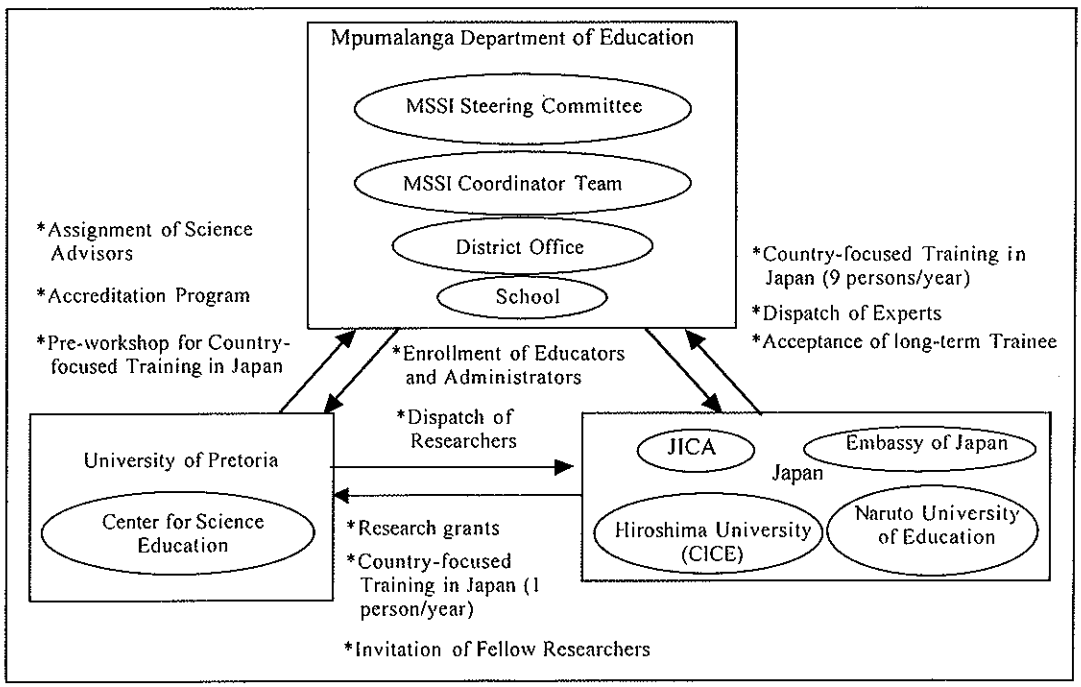
(2) Support should be extended so that CIs' could visit schools to monitor school-based in-service training as the numbers of participating schools increased.

(3) Budget and personnel allocation from MDE should be enhanced to secure the sustainability of the Project.

5. PRESENT STATUS OF THE PROJECT

The present project administrative structure is shown in Figure1. As clearly seen, the three bodies that are "collaborative partners" maintain their close relationships through various activities and inputs.

Figure1: Project Administrative Structure



The main implementing body is MDE, which is responsible for developing and disseminating the innovative method of maths and science education derived from outcomes-based education (OBE). In this method, the teachers in actual educational settings create and practice their own instructional contents and concrete learning activities, taking into account the goals to be achieved by the students. The teachers then undergo a series of activities consisting of CI

workshops (three times a year), HOD workshops (three times a year), in-school training (at least once a month), and classroom teaching (everyday), and ultimately aim to actualize high-quality classroom education.

The University of Pretoria is responsible for promoting the assimilation of "Japan's experiences" while effectively utilizing the existent know-how and technologies for mathematics and science education in South Africa. Besides this, the university is also expected to play an active role in building the foundation, which will allow projects to be implemented only with domestic resources within South Africa in the future through increasing incentives for the participant teachers in the Project by utilizing the graduate school credit approval system, and through efforts to analyze and accumulate the project results as an academic study, among others.

The role of Japan in the Project is to help build a system to promote these activities by the Department of Education, offer a wide range of know-how and experiences gained in Japanese education thus far, provide appropriate guidance at various stages, and to support the implementation of those activities when and where needed. Therefore, several different schemes have been organically combined, including the Grant Aid for Grassroots Projects with the Country-focused Training Course and the Dispatch of Technical Cooperation Experts, the admission of long-term trainees, and the provision of research grants and funds.

In Figure 2, numbers of school participation and the degree of their involvement in school-based INSET is shown.

Figure 2: Numbers of participating School and the state of conducting school-based INSET

Disstric	Number of participating Schools			Number of Schools by frequency of Implementing School-based INSET			
	2000	2001	2002	Conduct regular basis	Conduct occasionally	Drop out	Others
Groblersdal	20	30	60	4	12	0	44
Kwamhlanga	11	23	46	6	-	1	39
Moretele	10	20	37	3	25	-	9
Witbank	10	20	55	11	16	1	27
	-	10	25	2	8	0	15
Hazyview	-	10	20	5	8	0	7
Malelane	-	12	27	10	8	0	9
Nelspruit	-	10	23	0	0	2	21
Ermelo	-	-	10	3	5	-	2
Standerton	-	-	10	4	5	-	1
Total	51	135	313	48	87	4	174

6. RESULTS OF EVALUATION

The results of evaluation based on JPCM method are summarized below.

(1) Relevance

The project purpose and overall goals of the Project are highly relevant to the needs of South African society. Improving education has been one of the most important issues in South Africa since the beginning of the democratic Government. Educational expenditure has

significantly increased under the post-apartheid democratic Government, from R31.8 million in 1994 to R51.1 million in 2000 at almost 6% of GDP. The educational sector's share of the Government investments in South Africa is one of the highest in the world. This project supports the Governmental policy to enhance the ability of grade 8 and 9 students in mathematics and science through the establishment of sustainable school-based in-service training.

(2) Effectiveness

Considering the amount of time spent on the Project so far, the project purpose has been accomplished at a satisfactory level. A good foundation of monitoring and evaluation system has been laid out in terms of school-based in-service training. The functional basis of the monitoring and evaluation system called the "cascade model" has been established. This is considered to be a fruit of the Country-focused Training and interaction with the Japanese experts through project activities, and as a result, the capacity of MDE staff, especially of CIs, has been augmented to a great extent. At the time of evaluation, more than 50% of the provincial secondary schools are participating in the Project and the number is expected to increase further.

However, it is difficult to conclude whether or not the project purpose of establishing a school-based in-service training system in Mpumalanga province has been accomplished satisfactorily. The Study Team considered that there is not enough data to judge the present status of school-based in-service training in Mpumalanga province. There is a room of improvement for a monitoring system of the Project. The monitoring system of MSSI is not functioning at a level at which key information for progress management could be collected, sorted and forwarded to the decision makers in a timely and regular manner.

(3) Efficiency

The efficiency of the Project is considered to be high. First, as a whole, it was confirmed that the inputs for the past two and a half years have been proper in terms of quantity and timing. There have been no unnecessary or excessive inputs for the Project so far. Second, Most of the inputs, such as Country-focused Training in Japan and dispatch of short-term experts, have contributed to the generation of the outputs. The inputs provided by each partner and the outputs accomplished are summarized below.

Inputs from the Government of Japan

There are the following four types of inputs from the Government of Japan:

1) Country-focused Training in Japan;
2) Dispatch of long-term and short-term experts to give advise to school-based in-service training;
3) Financial support for the Research Project on the Applicability of the Japanese Experiences in Science and Mathematics Education in Republic South Africa by UP; and
4) Provision of equipment to teachers' centres (TCs) under the scheme of Grant Aid for Grassroots Projects.

The first three have been executed well in terms of amount, quality and timing. To date, 52 trainees, comprising CIs and MDE officials, have received training in Japan and 33 experts

dispatched to the Project overall. Meanwhile the provision of equipment to TCs has been behind the schedule.

Inputs from MDE

Inputs from MDE have also been executed smoothly. Inputs from MDE comprise:

1) Buildings and facilities;
2) Offices for Japanese experts and secretarial support;
3) Designation of project coordinators;
4) Assignment of CIs in each district; and
5) Project running cost such as transportation cost for CIs to workshop venues.

At the time of evaluation, 20 CIs are assigned for the Project. It should be pointed out that MDE should carefully maintain adequate budget arrangements for the Project, including the workshop cost and the like, although it has gradually increased financial support.

Inputs from UP

Inputs from MDE comprise:

1) Designation of project coordinators;
2) Personnel cost; and
3) Customization of the existing courses.

The pre-workshops for the Country-focused Training in Japan held by UP were highly appreciated by MDE staff. The mathematics advisor has yet to be appointed, although this issue has already been pointed out in the midterm review.

Accomplishment of the Expected Outputs

Interviews with the staff concerned, observations of HOD workshops and examination of documents all indicate that the majority of the expected outputs have been attained overall. A notable exception is the improvement of the functions of TCs. The evaluation of the outputs is summarized below with (+) for positive and (-) for negative marks.

Output 1: CIs obtain basic knowledge and skill to serve as coordinators through the training in Japan.

(+) For the last two and a half years, 52 trainees in total have been dispatched to Japan.

(+) Through the training in Japan, the trainees learn about the secondary education system in Japan.

(+) The planning session in the training allows them to focus on and identify the areas of urgent needs in secondary education in South Africa.

Output 2: CIs are capable of supporting HODs/ SHs in maths/science.

(+) CIs have compiled, printed and distributed educational materials, such as "Planning and Running a Workshop" and "Peer Teacher Learning."

(+) CIs have organized the HOD workshops and helped HOD participants understand the workshop objectives with proper and timely guidance.

(+) The "reflection meeting" held by CIs at the end of everyday during the workshop works effectively in identifying the shortcomings of the workshop and the solutions thereof.

Output 3: HODs/SHs are capacitated to conduct a school-based in-service training session

(+) It was observed that the HOD participants in the workshop regarded the Project very positively.

(+) The interviews with MDE staff revealed that a school-based workshop was held regularly at many schools.

(-) However, the quality of the workshops had not been fully monitored by MDE.

Output 4: Supportive environment is established for school-based in-service training at each school

(+) Each school conducts workshops in accordance with the school policy.

(-) The policy is not necessarily put in writing.

(+) Principals submit their reports on INSET activities at their school.

Output 5: MDE is capacitated to plan, monitor and evaluate project activities

(+) It was found through the interviews with MDE staff that they understood the significance of monitoring and evaluation.

(-) Monitoring and evaluation is yet to be performed at a satisfactory level.

(-) Approximately 60-70% of Quarterly Progress Reports are collected (which is short of the target of 90% indicated in the PLM) although all reports are available at the 5-day workshop.

Output 6: Resources for school-based in-service training are developed.

(+) Materials and activities for school-based in-service training are appropriately prepared at workshops by both CIs and HODs.

(-) Due to the delay in delivering equipment to TCs, preparation of resources has not been possible to the full extent on some subjects.

(-) Though some materials are very well prepared, they may be further improved with more pictures and illustrations for better understanding of participants.

Output 7: Each school is capacitated to develop its own Learning Programs.

(+) According to the interviews with MDE staff, each school now has its own Learning Program.

(-) The quality of programs developed at individual schools has yet to be assessed.

Output 8: Educators are equipped with a sound understanding of maths/science subjects.

(+) Teachers in Mpumalanga Province are given priority for registration in three year program, Further Diploma in Education (FDE), as scheduled. (None has not yet received diploma at the time of evaluation, and monitoring should be conducted in six months.)

Output 9: Teachers effectively utilize TCs for project activities.

(-) At the time of evaluation, equipment had not been installed at TCs and they were not fully functional.

(-) At present, secondary school educators cannot seek technical advice or consultation from CIs at TCs when they need it mainly due to the insufficient number of MDE staff deployed at TCs and in part to the lack of transportation to TCs.

(+) TCs are used for workshops and computer training.

Output 10: School database is created in each district.
(+) Data files for monitoring and evaluation have been prepared.
(+) The database is kept at MDE Head Office in Nelspruit for use and updated when new districts join the Project.
(-) Most CIs are lacking in computer skills and thus cannot fully utilize the system.

(4) Impact

The positive impact of the Project was noted and observed. For instance, the Project improved the image of school-based INSET through its application to maths/science education. As a result, at some schools, the school-based in-service training is applied to subjects other than mathematics or science, such as language classes.

According to some interviewees, math and science teachers used to work individually on their assignment and interaction among teachers was rare. Yet, having been involved in the activities of MSSI, they naturally came to work as a team. Also, recently the International Agreement for Academic Cooperation between UP, South Africa and Naruto University of Education in Japan was signed by UP and Naruto University of Education, from which Japanese short-term experts have been dispatched. These are also considered to be another positive impact caused by the implementation of project activities.

As for the goals of helping the grade 8 and 9 learners in the province acquire and enhance their mathematics and science skills and of improving the quality of maths and science education through enhancing the teaching skills and subject knowledge of educators in the province, the impact of the Project is yet to be seen.

(5) Sustainability

There is a good chance that the Project will become sustainable taking considering all the study results and findings. However, as likewise pointed out in the midterm evaluation, more efforts are needed to enhance the budget and personnel allocation for education by MDE to secure and further strengthen the sustainability of the Project.

Financial Aspect:

As mentioned in the previous section, the budget allocation by the South African Government for its education sector is substantial, and as long as the educational policy of Mpumalanga province is maintained, it is unlikely that financial problems will jeopardize the Project's continuation.

Institutional Aspect:

To date, more than 50 trainees have been dispatched to the Country-focused Training in Japan. It was observed that the trainees, consisting of a project coordinator team and CIs, had become familiar with the secondary school education system in Japan. They came to understand how to apply their experiences gained in the training to the same field in Mpumalanga province through the Project implementation. Therefore, it is considered safe to conclude that the core Project staff have become capacitated steadily. However, taking the increase in the number of

participating schools into consideration, shortage of manpower of CIs and full-time staff at TCs is still foreseen.

Ownership and motivation of MDE staff and HODs/SHs

Since the implementation of the Project began under the tripartite partnership, the sense of ownership and the motivations among MDE staff have been fostered, probably to a greater extent than by other technical cooperation-type projects. During the project implementation, Japanese experts who joined the Project decreased their intervention gradually, leaving the initiative in the activities to the MDE staff, to ensure the sustainability of the Project. Also, at the HOD workshops conducted by CIs, HODs/SHs have actively participated with eagerness to learn and improve their pedagogic skills.

7. CONCLUSIONS AND RECOMMENDATIONS

7-1 Conclusions

General

The project evaluation study has revealed through various meetings, interviews and questionnaires, etc. that the Department of Education has developed a strong sense of high ownership, and CIs who play the central role under guidance, instruction and supervision of executive officials of the Department of Education have been steadily implementing the Project. For example, the HOD workshops are functioning in accordance with their objectives as CIs are actively involved in the management and lectures of the workshops with active participation of HODs, and so far two manuals have been complied by CIs and the quality and practicality of the manuals are extremely high. These attest the steady progress of the Project. Based on these observations, it is clear that at present the Project is recognized by the Department of Education executive officials, CIs and HODs, and a series of activities have been put into practice smoothly as CIs who are the central players for the implementation of MSSI have steadily acquired knowledge and skills.

On the other hand, in the Project Japan has been helping institute a system to promote these activities by the Department of Education, offer various know-how and experiences gained in Japanese education, provide appropriate guidance at various stages, and to support the implementation of those activities when and where needed. For this purpose, several different schemes such as the Grant Aid for Grassroots Projects, Country-focused Training Course and the Dispatch of Technical Cooperation Experts, the admission of long-term trainees, and the provision of research grants and funds were organically combined.

The present study has confirmed that various inputs from Japan are properly handled, through which, an important tie between the Department of Education and the University of Pretoria has been established. Further, it was acknowledged during the study that experts appeared to be at work taking the idea of "providing experiences" seriously and paying very careful attention not to impose Japan's presence excessively. There is not only the system in which long-term experts are limited to one for coordinator only, but also individual experts including short-term experts are engaged in their activities clearly aware of their "commitment to support of the Department of Education". It appears that such systems and awareness of experts have greatly contributed to building trust with the collaborative partners. Incidentally, during

the study UP and Naruto University of Education concluded an inter-collegiate agreement, and cooperative efforts beyond the framework of ODA are about to be undertaken. This will hopefully contribute to improving the sustainability of the Project.

The role of UP has been to promote the assimilation of "Japan's experiences" while effectively utilizing the present know-how and technologies in mathematics and science education in South Africa. In addition to this, the university is also expected to play an active role in establishing the foundation, which will allow projects to be implemented only with domestic resources within South Africa in the future, through increasing incentives for the teachers participating in the Project by using the graduate credit approval system of the university and making efforts to analyze and accumulate the project results as an academic study, among others.

Currently, UP is developing activities, such as conducting surveys at schools through the Project and monitoring through participating in various workshops. Unfortunately, coordination with the university's mathematics department in the Project has so far been inadequate because of the absence of researchers cooperating as project advisors. However, the university has written an academic paper on curriculum implementation based on its experience in the Project (although instead of MSSI the paper's contents seemingly focus on the implementation of "Curriculum 2005," a larger framework than MSSI). The university is planning to develop activities involving its education department in the future, and thus is expected of further contribution, not limited to securing mathematics advisors.

As mentioned above, the administrative structure and the division of responsibilities for the respective organizations and individuals represent an unprecedented undertaking for JICA's technical cooperation to date. It is speculated that these were established with the purpose of making the most of the limited resources from Japan, taking into consideration various conditions such as the recipient country's needs, capacities for implementation and eagerness, etc., and the peculiar situation of South Africa that has been making every effort to wipe off the negative heritage of apartheid (e.g., segregation of blacks and whites, intentional/institutional restriction on maths and science education for blacks, etc.). Moreover, since this is the first technical cooperation project in South Africa by JICA, it is considered to be an important project that would point to the direction of JICA's technical cooperation for the country in the future.

Project Management Aspect

As stated above, the Project has made a good progress in total during the past two and a half years, having started with almost nothing until its "cascade" reached downwards to more than 50% of secondary schools in Mpumalanga province have been involved in the Project activities. Also, capacity building of CIs, and many of HODs and SHs have been successfully accomplished.

Based on the results of the interview to the staff concerned, site observation of workshops and examination of teaching support materials prepared by CIs and HODs and SHs, the Study Team recognized that a good foundation of the monitoring and evaluation system of school-based in-service training had been laid for future improvement in secondary science education in Mpumalanga province.

The concept of tripartite partnership has functioned well through the Project period so far, and contributed to establishing mutual trust especially between MDE and UP and foster the sense of ownership and the motivation of the recipient countryside, which will lead to secured sustainability of the Project. Also, rapport building was made successfully among the Japanese experts, MDE staff, CIs and UP. These are considered another factor that has contributed to the generation of progress of the Project.

However, when it comes to the management of the Project, a few questions are raised. First, some project components may be difficult to achieve completely within the expected period of time given the large number of schools and the large area to cover in the entire province. For instance, it would take a long time to time to realize the project purpose to establish a school-based in-service training system in Mpumalanga province. Also, the same applies to the overall goals to equip the grade 8 and 9 learners in the province with competitive skills in mathematics and science and to improve the quality of mathematics and science education in the province as a whole through enhancing educator's teaching skills and subject knowledge.

Second, verifiable indicators to examine the progress of the Project have been absent until the time of final evaluation. Generally, monitoring activities are based on certain prescribed indicators and feedback is provided through monitoring network established in the course of project implementation. Therefore, it is the Study Team's conclusion that the feedback procedure for monitoring and evaluation of school-based in-service training should be re-examined and improved. In particular, at the school level, the progress of the project activities has not been monitored regularly and sufficiently. This may be mainly attributable to the fact that the numbers of CIs who perform quality control of activities at the school level has not increased the numbers of participating schools. But more fundamentally, it should be pointed out that there is no solid monitoring system in MDE at central level.

7-2 Recommendation

(1) Further cooperation under the tripartite partnership

Under the tripartite partnership, the Project has shown successful implementation overall. In order to fulfil the project purpose and overall goals in the future, the collaboration among the tripartite partners should be maintained. The Study Team also expects that MDE and UP will enhance the ownership and the initiative to secure the sustainability of the Project.

(2) Larger budget and staff allocation by MDE and UP

For maintaining and expanding the function of school-based in-service training system at school level, appropriate allocation of budget for the MSSI activities should be carefully arranged. In terms of staff allocation, resources for mathematics education from UP and the appropriate assignment of CIs from MDE are required as soon as possible.

(3) Establishing verifiable indicators to monitor the project progress

To secure and improve the quality of school-based in-service training, it is suggested that MDE develop a strategy to enhance its functions to monitor and evaluate for the remaining project period, by which to measure the project performance at the school level. For this purpose,

first, verifiable indicators to monitor the progress and control the quality of school-based in-service training should be developed within the existing monitoring system.

(4) Instituting a project monitoring system

In addition to the above, for proper monitoring of the Project, it is important to clearly define the key information for progress management and develop a system that allows such information to be collected, compiled and forwarded to the decision maker regularly in a timely manner. For the development of the monitoring system, the following should be clarified and determined.

- Information to be collected,
- Information collector and timing and method of collection,
- Information compiler and timing and method of compilation,
- Decision maker and timing of decision making, and
- Timing and method of notifying decisions.

Also, effort must be made to increase the number of CIs immediately to meet the increase in the number of schools registered in the Project.

(5) Conducting a TIMSS-type survey

At the time of evaluation, the Study Team found it difficult to evaluate the extent to which the overall goals have been attained by certain indicators. Thus, it is proposed that MDE conduct a TIMSS-type survey by the end of the project period consulting with UP for the selection and development of indicators and the collection and analysis of relevant data.

8. NOTABLE FACTORS OF THE SUCCESS OF THE PROJECT

As presented in the previous sections, the Project continues to progress smoothly at present, and then what are the factors of its accomplishment? There might be factors that could not be elucidated by PCM-based evaluation, and thus an attempt is made below to investigate such factors that are especially notable, referring to interviews with the people concerned and related reports.

(1) Overcoming the weaknesses of the cascade model

The farther the step is away from the origin of the cascade, the weaker its effectiveness and the more difficult the monitoring of activities becomes. This is generally considered to be the cause when the cascade model falters. Understanding this, in the Project care was taken to set the minimum amount of information to be conveyed at workshops, not most of which is conceptual or theoretical, and placing importance on practicality, to present it in the concrete form of teaching materials, which can be used in classrooms. By this, it was expected that the minimum required information would be retained even at a distant step from the origin of the cascade. Moreover, a system for the participants and the provincial department of education to keep track of the activities at each step and feed their outcomes back to the project management (i.e., top-down flow) as well as a mechanism to create bottom-up flow have been devised.

It was also incorporated to regularly hold group activities that emphasize the "sharing" and "promotion of group consciousness" among the participants and those by which to reflect on daily events. These activities aimed to create, as it were, a "new organizational culture" within the Department of Education. They would not only help establish lateral relationships among the participants, which had been normally weak, but also let the participants actually experience that their relationships could be improved by sharing the knowledge and know-how they have and that their activities could be improved by reflecting on their everyday actions. Through those activities, the counterpart would accumulate success experience and internalize such success experiences within its organization.

(2) Construction of a province-wide system

In case of project-based technical cooperation, some specific objectives must be achieved within the limited time and inputs. That is why projects are generally implemented only at a small part of their target region designated as "pilot study area". However, the project often ends only at the pilot area and does not spread to areas outside since there is no mechanism to extend the project results to other areas built into the initial plan.

On the other hand, since the establishment of the democratic Government in 1994, the concept of equal opportunities had been widespread in South Africa and it was difficult to "select" pilot areas and then implement projects in Mpumalanga province. Moreover, reflecting on the precedential pilot-based project by DFID, which not only failed to spread its effects widely but also brought about general dissatisfaction toward the partiality in benefit sharing and apathy toward its results, it was seen more appropriate to target the entire areas of Mpumalanga province.

Because of the background as described above, it was decided to build a system encompassing the whole province, and the project was formulated to cover step-wise all the secondary schools in all the areas without setting pilot areas. The project was then implemented covering 51 schools in the first year (2000), 84 schools in the second year (2001) and 178 schools in the third year (2002), and is scheduled to cover 540 schools by March of 2003.

As presented in the previous section, considering the scale of ordinary technical cooperation projects, the objectives of this project may appear to be "ambitious." Yet, to date the number of participating schools has been increasing along with the initial plan, and the project should be evaluated highly in the respect. Though evidently all this has been made possible by the continuous efforts of those involved in the project, it is also considered to have resulted from various other innovative ideas put into practice working complementarily and augmentatively. The initial plan was not confined to a simple project design based on inputs and activities but it further encompassed mechanisms and frameworks to run the project efficiently and effectively, and that could be pointed out as a factor contributing to its fruitful implementation.

(3) Integration of the project activities into the routine work of the Department of Education

Reflecting on the assistance toward MDE up to the point, projects had been managed mainly by people outside the department of education (e.g., aid organizations' experts and educational NGOs' staff). It had been recognized as a problem that sustainability potentials were low

because those people would leave once the projects were completed. Therefore, in the Project it was planned that the project activities would be incorporated as part of the routine work at the department and the project would be implemented using the same chain of command as it was. That the project encompassed the entire province of Mpumalanga appeared to have influenced a great deal the way the project was carried out subsequently. The interviews with MDE administrators revealed that at least administrators at the same level as or above curriculum implementers (CIs) regarded the project as their own, and their sense of ownership as the main implementing body was strong.

In addition to the above, it had also been pointed out as problematic that because most of the project running cost was paid for by outside organizations, the province would fail to establish a system to pay for the running cost on its own rendering the sustainability potentials low. In response to this, care has been taken to build a mechanism for the provincial Department of Education to pay for the workshop running cost stepwise by incorporating the project activities into the routine work at the department so that the project could continue only with domestic resources of South Africa after its completion. Such mechanisms had been built for similar projects in other countries before. However, in the Project the budget for the MDE has been increasing relatively steadily despite the fact that there are still many inputs from Japan, and this aspect should be highly regarded.

(4) Emphasis on school-based activities

The problem had been noted that in MPSI by DFID the beneficial effects of the project (teaching materials, methods and skills) stopped at only a small portion of the entire teachers and did not spread because the workshops, the main activity of the project, only targeted at teachers of the ranks. Taking this into consideration, the Project emphasizes an approach toward schools as organizations, not toward teachers as individuals. For example, its workshops are designed not for teachers of the ranks but for head teachers of the respective subjects, who are in charge of their organizations. Further, principals are invited to participate in the workshops, and efforts have been made to have them become responsible for in-service training at each school. It is likely that by showing understanding toward in-service training, principals would put the subject head teachers at ease running workshops in school smoothly and the teachers of the ranks participating in them. Moreover, since the district educational directors are lower in the organizational rank within the Department of Education than the principals, if they cannot obtain the principals' understanding, the entire activities of the Project as a whole may be jeopardized. Therefore, the principals' approval is considered to be an important determinant of the outcome of the Project.

Unfortunately the Study Team had almost no opportunity to actually visit schools and interview principals and teachers, for the present project evaluation coincided with a school recess. Also, the responses on the questionnaires and interviews for the district educational directors and the subject head teachers of each school indicated all in all, "the implementation of in-service training was generally proceeding."

(5) Voluntary participation of a local university as a partner

To make the most of the existing know-how, skills and experiences in South Africa as well as to secure support based on an academic viewpoint for the assimilation of Japan's experiences, a

local university (UP) has been involved as a partner, which now actively participates in the project. The university has sorted and compiled the project experiences through monitoring, and has contributed to the establishment of know-how and the public relations of the project through publications and presentations of academic papers. Moreover, it has been effectively serving as a substantial partner, also organizing a pre-departure orientation for the prospective participants of the Country-focused Training Course in Japan and admitting administrators into its academic programs in education, among others.

JICA has routinely attempted to have local universities accumulate knowledge and experiences gained through projects, adapt them to best suit their countries and target areas, and take charge of continuing the projects beyond their completion taking the initiative. However, in many cases JICA had the universities take over the functions after the projects completed, and thus the Project might be an unprecedented case in which JICA tried an approach making clear what the university was supposed to do as a cooperative partner from the start of the project. At least, this is the first attempt by JICA in the field of education, which deserves attention.

Incidentally, in the hearings conducted during the present study for those concerned at the university, the comment was obtained, "MSSI has made it possible for whites to visit and conduct studies at black schools, which would have been impossible under normal circumstances considering the past history and the present social conditions." This indicates that the Project has also given an incentive to the university. Further, the fact that the university, which once was only for whites, has been conducting research in a former homeland (black residential area) through the Project can be seen that Japan's cooperation has to some extent contributed to promoting harmony between blacks and whites who were segregated by apartheid. Such impact that assistance has brought deserves a just assessment.

(6) Emphasis on the provision of know-how

The know-how that was successful in Japan does not necessarily work in the same form in partner countries. With this in mind, the Project employed the "experience-provision approach." In this approach, the know-how and technologies that succeeded in Japan are not to be transferred but Japan's experiences to be provided thereby letting those concerned in the target areas select, digest and reconstruct them to suit their needs. For example, the participants in the Country-focused Training Course were limited to those directly involved in the project, and the content of the training was also limited to the planning of training and the preparation of training materials for the next year so that it was directly linked to the project activities. In so doing, it was expected that the South African side would develop appropriate technologies on its own. Moreover, the adoption of the experience-provision approach was also important in ensuring that those concerned on the Japanese side would only support from behind and the implementing body would be MDE. As described so far, the Japanese side was only to present options, and since the decision-making concerning the project management and implementation was in the hands of the provincial department of education, it was hoped that the South African side would develop the sense of ownership for the project.

(7) Adoption of program approach

The program approach was employed. It was planned to invest the existent schemes into Mpumalanga province and make it so that they would complement each other and generate

multiplier effects. For example, dispatch of middle- and long-term experts, the Country-focused Training Course for maths and science teachers and training in local educational administration, research support, long-term trainees, and the Grant Aid were all linked so that the effects of each would complement and augment those of the others. Through this, the key people of the province came to understand the present state of education in Japan, and thus it was possible to discuss based on the experiences of Japan. As a result, a sense of unity developed among the key people of the province involved in the project.

ANNEX:
ANNEX 1: Project Logic Matrix for Evaluation

8. アンケート結果取りまとめ

n=5

Mpumalanga Secondary Science Initiative (MSSI)
Project Evaluation Study by JICA Evaluation Team
Questionnaire to Curriculum Implementors

Respondents: [n=5]

Q1.Questions concerning the assignment of personnel

(1) What do you think of the dispatch of JICA long-term (LT) expert by JICA?

	Appropriate	Nearly Appropriate	Not Appropriate
Number of LT Experts	4		
Capability	2	1	
Duration of dispatch	2	1	
Timing of Dispatch	3		

Reasons/Comments (if you have "Not appropriate", give reasons)

(M.F. Mengnai) Language might be a problem.

(2) What do you think of the dispatch of short-term (ST) experts by JICA?

	Appropriate	Nearly Appropriate	Not Appropriate
Number of ST Experts	3		1
Capability	2	1	
Duration of dispatch	3		
Timing of Dispatch	3		

~~Reasons/~~Comments: ~~(if you have "Not appropriate", specify the ST Expert and give reasons)~~

"Language problems: time consuming to translate (takes twice as long)"

(3) Do you think that sufficient numbers of personnel were assigned to MSSI by MDE?

	Appropriate	Nearly Appropriate	Not Appropriate
Number of CIs	1	2	2

Reasons/Comments: (if you have "Not appropriate", please specify and give reasons)

- Not appropriate: "Number of schools is big and CIs also have many other responsibilities."
- Comment: "In planning and conducting workshops, CI's are adequate in number. There is, however, not enough manpower to support schools individually and visit there as we would like to. One more CI per subject per district is required for this purpose."

(4) Do you think that sufficient numbers of personnel were assigned to MSSI by UP?

(Assist. Profs: Assistant Professors Grad Stud: Graduate Students)

	Appropriate	Nearly Appropriate	Not Appropriate
Number of Professors	1	2	1
Number.of Assit.Profs		2	1
Number of Grad Stud.		1	2

Reasons/Comments: (if you have "Not appropriate", please specify and give reasons)

- Not appropriate no. of profs & grad stud.: "only 2 people involved with the project, they are not in all our workshops"
- Comment: "no personnel for maths"

Q2: Your comments on "Country-focused Training in Japan"

(1) Have you attended the training in Japan? (If your answer is "No", please skip to Q3)

[Yes 4] [No 1]

If "Yes", please specify the Field of Training: _____

n=5

[Timing of dispatch: Year_____ Month _____]

[Field of Training:_____]

- 1 natural science, 2001, 10-12, natural science;
  1 school base INSET in M/S, 2000, 11-12, science;
  1 maths and science education, 1999, 10

(2) Was the Training program useful?

[4] Useful, [ ]Nearly useful, [ ]Not useful

Reasons/Comments:'

"Training in Japan provided an opportunity to study how other education systems are working effectively."

"Firsthand experience in school base[d] INSET. The assistan[ce] in content from professors."

(3) How was the training duration?

[2]Appropriate, [2]Nearly appropriate, [ ]Not appropriate(too short or too long)

Reasons/Comments:

- Nearly appropriate: "was shorter than expected"

(4) To what extent has the training program contributed to improve your ability to work as a coordinator for MSSI?

[3] Very much, [1]To some extent, [ ]Hardly

Reasons/Comments:

Q3: Provided equipment to Teachers Center

(1) What do you think the provided equipment Teachers Centre?

	Appropriate	Nearly Appropriate	Not Appropriate
Number of item		2	1
Quality of item		3	1
Timing of provision		2	1

Reasons/Comments: (if you have "Not appropriate", specify the equipment and give reasons)

- Not appropriate for all 3: "not yet received"

(2) How often do you visit the TC for MSSI activities?

[times / week, month , year]

- 1/mo, 5/wk, 5/wk
- 1 responded "based at the TC" only and another "Moretele has no functioning TC"

2. <u>Question as regards Project Purpose and Outputs</u>

Q4: To what extent has the Project Purpose " A school-based in -service training system in the Mpumalanga Province is tablished." been achieved?

[ ] Fully achieved [5] Partly achieved [ ] Hardly achieved

Reasons/Comments:

"School-based INSET is taking place at motivated schools."

"Some schools understand and have started but some are still battling to set it up."

"Moretele has 3 schools which fully implement school-based INSET. Others attempt to have +-3-5

workshops/year. Cluster meetings are held but not attended by all."

"Not all schools are implementing the system."

Q5. How do you evaluate the level of achievement of the following MSSI outputs?

1. Curriculum Implementors (CIs) have basic knowledge and skill to work as coordinators through the training in Japan

[5] Fully achieved [ ] Partly achieved [ ]Hardly achieved

Reasons/Comments:

"CI's come back from Japan with workable facilitator's guides and are well prepared. Can be implemented immediately."

2. CIs are capable to support Heads of Department (HODs)/Subject Heads (SHs) in maths/science

[4] Fully achieved [1] Partly achieved [ ] Hardly achieved

Reasons/Comments:

- Fully achieved: "CI's are competent in their subject areas but cannot reach all HOD's individually due to manpower problems."

  "However, CIs give very little support to the HODs because of the many responsibilities they have."
- Partly achieved: "lack of time"

3. HODs/SHs are capacitated to conduct a school -based in -service training session

[ ]Fully achieved [5]Partly achieved [ ]Hardly achieved

Reasons/Comments:

"too many activities at schools"

"Some HOD's report that they are not yet sure how to conduct workshops."

"lack of enough support from CIs as they are engaged in many activities"

4. Supportive environment for School-Based In-Service Training in each school was created.

[ ]Fully achieved [4]Partly achieved [1]Hardly achieved

Reasons/Comments:

- Partly achieved: "Individual schools do not have the support from their principals and managers and some do not have cooperation from other teachers (especially those teaching higher grades, e.g., 12)."
- Hardly achieved: "Principals are not supportive enough."

5. MDE is capacitated to plan , monitor and evaluate project activities

[2]Fully achieved [2]Partly achieved [ ]Hardly achieved

Reasons/Comments:

- Fully achieved: "MDE coordinators do not attend workshops regularly."
- Partly achieved: "limited support from MDE"
- No response: "There are some indicators but difficult to see if they are achieved, or properly done."

6. Teachers Centres (TCs) are utilized effectively by teachers for the Project Activities.

[ ]Fully achieved [2]Partly achieved [3]Hardly achieved

Reasons/Comments:

- Partly achieved: "Very few teachers visit TC. Teachers get very limited time."
- Hardly achieved: "TC in our district is only needed for conducting workshops. There's no stationed person who can be available to help."
  "Moretele's TC is being coordinated by a person not from the project. TC is not functioning at all!"
  "There is no full time staff at the Teachers' Centre and there are no Project Activities either. Teachers' Centres are mainly used for workshops."

7. School database in each district is created

[2]Fully achieved [1]Partly achieved [2]Hardly achieved

Reasons/Comments:

- Hardly achieved: "no computers"

8. Resources for school-based in -service training are developed.

[ ]Fully achieved [5]Partly achieved [ ]Hardly achieved Reasons/Comments:

"As far as CI's can do this, it is don. Moretele has the TC problem."

9. Each school is capacitated to develop own learning Programs.

[ ]Fully achieved [4]Partly achieved [1]Hardly achieved Reasons/Comments:

"This is an ongoing process and not all are ready to develop learning programs yet. It receives attention."
"Teachers still need more training."

10. Educators are equipped with a sound understanding of mathematics/science.

[2]Fully achieved [3]Partly achieved [ ]Hardly achieved

Reasons/Comments:

- Partly achieved: "Teachers need more training."
  "Content sessions are short and loose standing. It helps but is not adequate."

Impact of the Project

Q6. To what extent has the Overall Goal 1:" Grade 8 and 9 learners in the Province acquire enhanced skills in mathematics and science" been achieved?

[1]Very much, [3]To some extent, [ ]Hardly

Reasons/Comments

- To some extent: "Lessons are planned and presented according to MSSI format. Teachers are willing to progress and develop. They highly commend MSSI project."
  "I would have been sure if I had enough time to visit schools and ascertain that what HOD's/School heads are taken through without these workshops filters down to learners in all schools."

For those who chose "To some extent" or "Hardly", do you think the overall goal will be achieved in the future?

[5]Yes, [ ]No

Reasons/Comments

"The project needs some time, and focus on few schools for a start to ensure quality."

Q7. For those who chose "No", what is necessitated to achieve the overall goal?

n=5

Comments

Q8. To what extent has the Overall Goal2: "The quality of teaching in mathematics and science in the Province is improved through educator's enhanced teaching skills and subject knowledge" been achieved?

[ ]Very much, [5]To some extent, [ ]Hardly

Reasons/Comments

For those who chose "To some extent" or "Hardly", do you think the overall goal will be achieved in the future?

[5]Yes, [ ]No

Reasons/Comments

"With more available material, contact session with CIs and other active teachers – the rest will follow."

Q9. For those who chose "No", what is necessitated to achieve the overall goal?

Comments

Q10. As a result of the implementation of MSSI, did any unexpected things, or positive/negative effects occur to you, to the community around your district, or to South African society?

[2]Yes, [3]No

Reasons/Comments (if "Yes", please specify the effect.)

"Implementation of C2005 is enhanced by the MSSI Project."

"Some new positive attitudes towards our new curriculum. A "sharing" attitude has emerged and educators support each other."

Sustainability of the Project

Q11. Are you confident that you will conduct the current activities without the support of Japanese Experts?

[4]Very much, [1]To some extent, [ ]Not sure

Reasons/Comments:

- Very much: "But still assistance is required."

  "I know my subject and have the necessary facilitator skills. I do not know if all CI's have the content knowledge."

  "As long as there's support from the Department."
- To some extent: "JE are able to share with us or HODs the way they approach things in Japan."

Q12. Do you think a principal in each school understands the significance of MSSI activities?

[ ]Yes, [3]to some extent, [2]No

Reasons/Comments:

- To some extent: "Not all principals are particularly in MSSI activities."

  "There are principals who are not supportive, which shows the lack of understanding."
- No: "There is evidence to suggest that many principals do not support the project fully. This is being adjusted."

  "Some don't and they seem not to be interested."

n=5

Q13. Do you think the MDE will have no problems in terms of budget, administration, etc. in future?

[ ]Yes, [ ]No, [5]Not sure

Reasons/Comments:

"Budget is limited, [and] transport problems exist."

"Priorities keep on changing."

"I foresee financial excuses – I hear it too often."

Thank you for your cooperation.

If you have other suggestions and comments on the Project, please write in below.

Suggestions and Comments:

Mpumalanga Secondary Science Initiative (MSSI)
Project Evaluation Study by JICA Evaluation Team
Questionnaire to Head of Departments and Subject Heads
Respondents: [n=6]

Q1. Do you think that sufficient numbers of following personnel were working for MSSI in your district?

	Appropriate	Nearly Appropriate	Not Appropriate
Number of CIs	4	1	1
Number.of HODs	3	1	2
Number of SHs	4	0	0

Reasons/Comments: (if you have "Not appropriate", please specify and give reasons)

- Only one HOD at our school for both math and science.

Q2. Do you think that sufficient numbers of personnel were assigned to MSSI by UP?

(Assist. Profs: Assistant Professors Grad Stud: Graduate Students)

	Appropriate	Nearly Appropriate	Not Appropriate
Number of Professors	1	3	1
Number.of Assit.Profs	1	3	1
Number of Grad Stud.	0	2	2

Reasons/Comments: (if you have "Not appropriate", please specify and give reasons)

- Have not met any.

Q3: Provided equipment to Teachers Centers

(1) What do you think of the provided equipment to Teachers Center?

	Appropriate	Nearly Appropriate	Not Appropriate
Number of item	1	1	1
Quality of item	2	1	0
Timing of provision	1	1	1

Reasons/Comments: (if you have "Not appropriate", specify the equipment and give reasons)

- An experimental kit was not available when I was in need of it.
- I can not answer the question since I have not been to the TC for over a year.

(2) Was facility improved after the MSSI had started?

[3] [Yes] [1] [No] [1] [Not Sure]

Q4. To what extent has the Project Purpose " A school-based in –service training system in the Mpumalanga Province is established." Been achieved?

[0]Fully achieved [6]Partly achieved [0]Hardly achieved

Reasons/Comments:

- Partly achieved -Not enough time to conduct workshops. Teachers resist.
- Partly achieved -As a school that joined the project this year(2002) , we feel that the project will produce good results. It will benefit both teachers and educators
- Partly achieved -Although MSSI is OBE, teachers have been really bogged down with work due to

OBE preparations and other administrative duties-not enough time to have INSET.

Q5. How do you evaluate the level of achievement of the following MSSI outputs?

1. Curriculum Implementors (CIs) have basic knowledge and skill to work as coordinators through the training in Japan

[2]Fully achieved [3]Partly achieved [0]Hardly achieved

Reasons/Comments:

- Partly achieved -We still expect more to come from the aide of CIs. With more years to participating in the project, we hope that everything will be fully achieved.
- Partly achieved -The CIs I have met at workshops seemed quite competent and well versed. I'm sure that more training will always be an advantage.

2. CIs are capable to support Heads of Department (HODs)/Subject Heads (SHs) in maths/science

[5]Fully achieved [0]Partly achieved [1]Hardly achieved

Reasons/Comments:

- Fully achieved -They do class visits and follow ups after the workshops has been conducted.
- Fully achieved -CIs were even helping us before we were involved in the MSSI project.

3. HODs/SHs are capacitated to conduct a school –based in –service training session

[3]Fully achieved [3]Partly achieved [0]Hardly achieved

R easons/Comments:

- Fully achieved -The training is still in progress. We hope that everything will be fully achieved if more time given.
- Partly achieved -Although HODs can conduct INSET-sometimes equipment and chemicals are a problem-or lack of time.

4. Supportive environment for School-Based In-Service Training in each school was created.

[1]Fully achieved [4]Partly achieved [1]Hardly achieved

Reasons/Comments:

- Hardly achieved -Tune frame is a problem. No more workshops are allowed during school hours.
- Partly achieved -Principals are willing to buy equipment and encourage educators to improve where necessary.
- Fully achieved -The four secondary schools in the same area are working cooperatively in the MSSI project.

5. MDE is capacitated to plan, monitor and evaluate project activities

[3]Fully achieved [2]Partly achieved [0]Hardly achieved

Reasons/Comments:

- Fully achieved -They give full support and send delegates on the first day of each workshop.
- Fully achieved -The workshops that we have already attended is evident of that.
- Partly achieved -Workshops were held by CIs-some are quite extensive.

6. Teachers Centres (TCs) are utilized effectively by teachers for the Project Activities.

[1]Fully achieved [3]Partly achieved [2]Hardly achieved

Reasons/Comments:

- Hardly achieved -It is cost effective to some schools since the school are far apart.
- Partly achieved -There is no full time staff to run the project activities efficiently.

7. School database in each district is created

[2]Fully achieved [3]Partly achieved [1]Hardly achieved

Reasons/Comments:

- Fully achieved -Material development is attained in the workshops.
- Hardly achieved -Long distance to travel-25km from our school to TC. There should be a TC in our vicinity.

8. Resources for school-based in –service training are developed jointly by UP and MDE.

[2]Fully achieved [2]Partly achieved [0]Hardly achieved

Reasons/Comments:

- Partly achieved -MDE has helped to some extent.

9. Each school is capacitated to develop own learning Programs jointly by UP and MDE.

[2]Fully achieved [1]Partly achieved [2]Hardly achieved

Reasons/Comments:

- Partly achieved -Upgrading projects have been initiated and most educators are participating in in these projects.

10. Educators are equipped with a sound understanding of maths/science subjects.

[4]Fully achieved [2]Partly achieved [0]Hardly achieved

Reasons/Comments:

- Fully achieved -Educators can solve problems related to maths/science.
- Partly achieved -Not all science educators are familiar with all aspects in eg. Smore are fine with biology, but not with physics or chemistry or earth science.

Impact of the Project

Q6. To what extent has the Overall Goal 1:" Grade 8 and 9 learners in the Province acquire enhanced skills in mathematics and science" been achieved?

[0]Very much, [5]To some extent, [0]Hardly

Reasons/Comments

- To some extent -Most educators are not adequately trained on how to in knowledge which integrates skills

Q7. For those who chose "To some extent" or "Hardly", do you think the overall goal will be achieved in the future?

[4]Yes, [0]No

Reasons/Comments

- Yes -With more supports, everything will be possible.
- Yes -In time and with the implementaion of OBE and MSSI-goal should be achieved.

Q8. For those who chose "No", what is necessitated to achieve the overall goal?

[Comments]

Q9. To what extent has the Overall Goal 2:" The quality of teaching in mathematics and science in the Province is improved through educator's enhanced teaching skills and subject knowledge been achieved ?

[3]Very much, [3]To some extent, [0]Hardly

Reasons/Comments

- Very much -It improves our way of conducting experiments.
- To some extent -We are still struggling to be most perfect.
- To some extent -For many teachers, this is a new way of taeaching. So, practice makes perfect, and takes time.
- To some extent -Few workshops have been attended in this regard.

Q10. For those who chose "To some extent" or "Hardly", do you think the overall goal will be achieved in the future?

[3]Yes, [0]No

Reasons/Comments

- Yes-We will be used to as time passes by.
- Yes -More workshops in this regard will help enhancing the quality of teaching maths/science.
- Yes -Only if there is interest and commitment by learners, since a teachers can only do that much.

Q11 For those who chose "No", what is necessitated to achieve the overall goal?

[Comments]

Q12. As a result of the Project implementation, did any unexpected things, or positive/negative effects occur to you, to the community, or to South African society?

[2]Yes, [4]No

Reasons/Comments (if "Yes", please specify the effect.)

- Yes-Teachers and learners work co-operatively as a team.
- Yes -The effects have been positive in the sense that the OBE type education is being easily approached.

Sustainability of the Project

Q13. Are you confident that you will conduct the current activities without the support of CIs?

[2]Very much, [2]To some extent, [2]Not sure

Reasons/Comments:

- To some extent -We will have a financial problem.
- To some extent -We still need guidance from CIs.

- Very much -The training we receive from them will help us to work independently with confidence.

Q14. Do you think that the principal in your school understand the significance of MSSI and show cooperation to your workshop?

[4]Very much, [1]To some extent, [1]Not sure

Reasons/Comments:

- Very much -He (a principal) even participates and makes presentation of some topics for INSET.
- Very much -He encourages educators to attend school-based INSET as well as the workshops.
- Very much -He always allow us to attend workshops and support us very much.
- To some extent -He has attended only the first workshop held in 201. But he understands the importance.

Q15. Do you think that the teachers which you are consulting understand the significance of MSSI and show cooperation to your workshop?

[3]Very much, [3]To some extent, [0]Not sure

Reasons/Comments:

- To some extent -They haven't yet realized that MSSI extends to other learning areas not only for mathematics and science.
- Very much -They always support positively when they are invited to workshops.

Thank you for your cooperation.

If you have other suggestions and comments on the Project, please write in below.

Suggestions and Comments:

- I suggest that this project may continue throughout because as teachers. We have gained a lot ever since this was implemented in our province. The learners are doing their activities happily and lively.
- Group work is improved through this project.
- Team work is also there, so is a very serious project for us to improve our skills of facilitating in our schools.
- We try to do whatever we got from the CIs and other facilitators.
- More workshops on the MSSI project should be organized where educators are capacitated and helped on problematic topics. Educators should also have access to more support material which they can utilize in their day-to-day teaching.
- With the introduction and implementation of OBE in the curriculum, MSI certainly has a very important role to play, especially in low-achieving subject like maths and science.

Mpumalanga Secondary Science Initiative (MSSI)
Project Evaluation Study by JICA Evaluation Team
Questionnaire to Principals Respondents :2

Q1: To what extent do you know about MSSI?

[very well] [0] [to some extent] [2] [hardly] [0]

Q2. Do you think the Project Purposes "School-based in -service training system in the Mpumalanga Province is established" is relevant according to your view as regards secondary education improvement in your school?

[Yes] [2] [No] [0]

[Comments/Reasons]

- It helps improve and expand educational fields of expertise. Improved educator confidence in science subjects.
- The project is very important for the development of all science subjects which also can project on the economic growth and industrialization of this country;

Q3: Have you attended 5-day workshop conducted by HODs?

[Yes] [1] [No] [1]

If your answer is "Yes", what is your comment on the workshop?

[Commnets]

- very positive –project aims at improving maths and science in province –problematic areas.

If your answer is "No", please give the reason?

[Reasons]

(1) [Busy for school management assignments (business trip, etc)] [1]-A delegate for the school was sent.

(2) [Absence from Illness] [ ]

(3) [Other reasons] [ ]

Q4. Do you think that MSSI activities have had good effects on educators in your school so far?

*Please answer with reference to the following indicators:-

1. HODs/SHs are capacitated to conduct a school-based in -service training session.

[Yes] [1] [No] [1]

[Reasons]

- Yes-Nature of subject lends itself to cooperation and allow educators with expertise to adjust each other.
- No-Not yet having the full training.

2. Each school is capacitated to develop own learning Programs under joint assistance of UP and MDE.

[Yes] [2] [No] [0]

[Reasons]

- Yes -Educators are presently involved in in-service studies and attend workshops organized by MDE.

- Yes- Educators have been introduced to the MSSI project and knowledge gain is disseminated to calss project in science and OBE.

3. Educators are equipped with a sound understanding of maths/science subjects?

[Yes] [2] [No] [0]

[Reasons]

- Yes-Each educator has specialized in maths/science/biology.
- Yes-But they still need more training.

Q5. Do you think it is necessary to formulate a school policy on School-based in-service training for your own school for effective implementation of MSSI activities?

[Yes] [2] [No] [0]

[Reasons]

- To streamline activities and facilitate effective implementation and monitoring.

Q6. Do you think that your school has sufficient support from MDE and University of Pretoria for MSSI activities?

[Yes] [2] [No] [0]

[Reasons]

- Yes-Educators involved in MSSI are invited to workshops where hey interact with other educators and facilitators
- Yes-This will facilitate more knowledge to all educators quickly.

Thank you for your cooperation.

If you have other suggestions and comments on the MSSI Project, please write in below.

Suggestions and Comments:

- Disruption of lessons by workshops held during teaching time.
- More workshops at school level for the purpose of easy access to this workshop i.e. in each school circuit is required. Then, they can be effectively applied and more educators can be exposed to this project.

n=7

Mpumalanga Secondary Science Initiative (MSSI)
Project Evaluation Study by JICA Evaluation Team
Questionnaire to Teachers

Respondents (District): [n=7]

Q1: To what extent do you know about MSSI?

[very well 1] [to some extent 6] [hardly]

[Comments/Reasons]

(L. I. Naude) interesting and motivating idea

(G. Nandakumar) I started attending the workshops this year 2002.

(T. F. Madonsela) It was introduced in our school and the secondary schools in our circuit are doing it.

(T. T. Manjike) because I attend[ed] only [a] few days

(M. J. Mabuza) I attended this course only three days last year.

Q2. MSSI, has a project purposes. "School-based in -service training system in the Mpumalanga Province is established", Do you think these purposes are relevant according to your view as regards secondary education improvement in your school?

[Yes 7] [No]

[Comments/Reasons]

(L. I. Naude) Educators gain more knowledge from each other and share ideas on the subject.

(T. F. Madonsela) They are relevant. We do have them in our school as grade 8 and grade 9 educators together. *We help one another where we have problems of choosing the relevant SO's.*

(Nkosi) In my school, true reflection of the MSSI project is seen where science educators meet together and discuss issues which are common problems to the learners, learning area, planning, assessment, etc., [and] come up with solutions.

(T. T. Manjike) because learning is a life long process. Educators too need to know in order to improve their performance in the classroom.

(M. J. Mabuza) It helps the learners to understand the learning content with ease, and be able to use it in everyday life.

Q3: Have you attended the workshop conducted by CI (Curriculum Implementors)s or HODs?

[Yes 7] [No]

If your answer is "Yes", what is your comment on the workshop?

[Comments]

(L. I. Naude) It was well prepared and motivating.

(D. Pillay) very helpful – sharing of ideas/opinions

(G. Nandakumar) It did not improve my teaching skills in the senior classes.

(T. F. Madonsela) Workshops are very good; they improve our way of implementing OBE in schools, how to assess their class and home activities. As we are moving from the old way of teaching, they empower us with relevant knowledge to do the work in schools.

(Nkosi) The workshops were developmental and they promote co-operative teaching and learning. Different teaching and learning and approaches of problem solving strategies were displayed by different educators.

If your answer is "No", please give the reason?

(T. T. Manjike) Yes, CI's improve our standard of implementing in classrooms and to gain confidence.

(M. J. Mabuza) The CI's have helped us to improve our teaching in classes and to gain confidence in the learning content.

[Reasons]

Q4: Do you think that MSSI activities have had good effects on your teaching skill and knowledge of maths/science subject?

[Yes 6] [No 1]

[Reasons]

(L. I. Naude) adds more activities to presentation and learners learn by doing

(T. F. Madonsela) Yes, MSSI activities have good effects on our teaching skills and knowledge of maths/science. How and where these learning areas integrate.

(Nkosi) Because I had my own way of teaching, but working in clusters has made me realize that a lot still needs development on my side. [As] different educators have different teaching skills, sharing ideas during workshops had a good effect on my teaching skills.

(T. T. Manjike) Because it improves the standard of the learners and they can communicate effectively.

(M. J. Mabuza) It makes learners to fill [feel] free to use apparatus in the laboratory.

Q5: Do you think it is necessary to formulate a school policy on School-based in-service training for your own school for effective implementation of MSSI activities?

[Yes 7] [No]

[Reasons]

(L. I. Naude) Maths and science are subjects that have to be followed through right to matric, and teachers need to discuss where learners are lacking and what areas need to be covered.

(D. Pillay) It is human nature to 'put on hold' or 'ignore' that which is not policy.

(T. F. Madonsela) Yes, it is necessary to formulate a school policy on school-based in-service training for our school, so that we can follow the policy in our school and all teachers of the same area will be able to work together and share problems and ideas as set on the policy.

(Nkosi) so that all educators be bounded by the policy of the school. Some are ignorant [to] take invitations to meeting by a colleague as an individual issue.

(T. T. Manjike) The policy will send out the ways and means of achieving the set goals in the policy.

(M. J. Mabuza) Because it will help teachers not to go back to the old style of teaching.

Q6. Do you think that your school has sufficient support from MDE and University of Pretoria for MSSI activities?

[Yes 4] [No 3]

[Reasons]

(L. I. Naude) When need arises, the CI's and HOD's have easy available access to the necessary information, i.e., there is no delay concerning the project.

(T. F. Madonsela) I think so because now and then we get visitors from the MDE for the MSSI activities.

(Nkosi) Because we are invited to workshops by the MDE, and the University of Pretoria once sent to our school a researcher on OBE grade 8 and 9 natural science and xxxx (maths?).

n=7

Thank you for your cooperation.

If you have other suggestions and comments on the MSSI Project, please write in below.

Suggestions and Comments:

(T. T. Manjike) I request the MDE and Naturo University to give us chance to study with the University of Pretoria.

(M. J. Mabuza) I request the University of Pretoria and the MDE to help us with more activities to make the MSSI a success.

n=4

Mpumalanga Secondary Science Initiative (MSSI)
Project Evaluation Study by JICA Evaluation Team
Questionnaire Survey for MSSI CooridinateTeam

Respondents: [n=4]

1. Input of the Project from Japanese Side

Q1. Questions concerning the assignment of personnel

(1) What do you think of the dispatch of JICA long-term (LT) expert by JICA?

	Appropriate	Nearly Appropriate	Not Appropriate
Number of LT Experts	2		
Capability	2		
Duration of dispatch	1	1	
Timing of Dispatch	2		

~~Reasons~~/Comments ~~(if you have "Not appropriate", specify the LT Expert and give reasons)~~

"The duration of the dispatched personnel should be equal to the project period. It takes some time for a new person to adjust."

"The plan to dispatch long term experts took too long. To date, if my information is correct, we will be receiving two in the Nkangala region."

(2) What do you think of the dispatch of short-term (ST) experts by JICA?

	Appropriate	Nearly Appropriate	Not Appropriate
Number of ST Experts	2		
Capability		1	
Duration of dispatch	1		1
Timing of Dispatch	2		

Reasons/Comments: (if you have "Not appropriate", specify the ST Expert and give reasons)

- Not appropriate for Duration of dispatch: "The development of teachers is, in our case, a long term issue since qualifications and therefore expertise is low. Short term experts have an impact that is hard to measure, though appreciated."

Q2. Your comments on "Country-focused Training in Japan"

(1) Have you attended the training in Japan? (If your answer is "No", please skip to Q3.)

[Yes 3] [No]

If "Yes", please specify the Field of Training: _____

- 1 management, 1 maths and science training, and 1 managerial/science/maths

(2) Training program:

[3]Useful, [ ]Nearly useful, [ ]Not useful

Reasons/Comments:

"The training was useful in the sense that it enabled one to have an idea of science and maths education in Japan. The planning we did in Japan made us focus and also identify areas of urgent attention."

n=4

"Exposure is good; experiencing different model of INSET useful; planning goes a long way towards implementation in SA, but not always successfully. Planning away from our base gives chance to concentrate without distractions."

(3) Training term (duration)

[2] Appropriate, [ ]Nearly appropriate, [ ]Not appropriate

Reasons/Comments:

"The duration was appropriate in that a considerable amount of work was covered in Japan although the schedule was very tight."

(4) To what extent has the training program contributed to the Output?

[2]Very much, [ ]To some extent, [ ]Hardly

Reasons/Comments:

"The skill of planning and facilitating workshops has improved. A 'habit' of having regular workshops has been established."

"Planning; experience (of INSET model) and exposure to levels of expertise that is in institutions (schools)"

Q3: Provided equipment to Teachers Center

(1) What do you think the provided equipment Teachers Centre?

	Appropriate	Nearly Appropriate	Not Appropriate
Number of item		1	
Quality of item	1		
Timing of provision		1	

Reasons/Comments: (if you have "Not appropriate", specify the equipment and give reasons)

Comment by the only respondent of this question: "[Equipment is] still at Head Office now. Considering the number of schools per district and the lack of equipment in schools, it would seem that the no. of items available for lending out may not be enough."

Questions concerning the Inputs from South African side

Q4. Allocation of necessary expenses for the implementation of the Project (Project budget)

1) How was the allocation?

[2]Appropriate, [1]Nearly appropriate, [ ]Not appropriate

Reasons/Comments:

- Appropriate: "The government provided staff (CIs) to work on the project and also made transport available for [. . .] the project."
- Nearly appropriate: "Agreement based on Department meeting, expenses for traveling, S & T (staff) and office accommodation for Japanese coordinator. All these were done."

2) To what extent has the allocation contributed to the Outputs indicated in PDM?

[2]Very much, [ ]To some extent, [ ]Hardly

Reasons/Comments:

"Without the staff and required transport, it would be impossible to achieve the goals of [the] project."

n=4

"The training of CIs was vital – it has been largely achieved in form of skills to prepare, run and maintain workshops and materials development. Much work still needed though."

And to what extent has the allocation of budget contributed to the Output indicated in PDM?

[ ]Very much, [1]To some extent, [ ]Hardly

Reasons/Comments:

"As indicated, the project would not have succeeded with the provision of personnel for training and meeting their needs in related areas seemed departmental."

Q5. Assignment of personnel

Do you think that sufficient numbers of personnel were assigned to MSSI by MDE?

	Appropriate	Nearly Appropriate	Not Appropriate
Number of CIs	1	2	1

Reasons/Comments: (if you have "Not appropriate", please specify and give reasons)

- Nearly appropriate: "A successful alternative was almost always implemented in cases where CIs were not available."

Do you think that sufficient numbers of personnel were assigned to MSSI by UP?

(Assist. Profs: Assistant Professors Grad Stud: Graduate Students)

	Appropriate	Nearly Appropriate	Not Appropriate
Number of Professors		2	
Number of Assit. Profs		1	
Number of Grad Stud.		1	

Reasons/Comments: (if you have "Not appropriate", please specify and give reasons)

2. Effectiveness of the Project

Project Purpose-1

Q6. How do you evaluate the level of achievement of the Project purpose, "A school-based in -service training system in the Mpumaranga Province is establishesd."?

[2]Fully achieved [2]Partly achieved [ ]Hardly achieved

Reasons/Comments:

- Partly achieved: "Many schools do not have staff to be serviced by trainee – he/she is the only "relevant" staff, and it has not been possible to fully verify this aspect."

Q7. To what extent have the following Outputs contributed to the achievement of the Project purpose?

1. Curriculum Implementers (CIs) have basic knowledge and skill to work as coordinators through the training in Japan

*Please answer with reference to the following indicators:

1-1. Numbers of trainees dispatched

[1]Very much [1]To some extent [ ]Hardly

Reasons/Comments:

- Very much: "All CIs involved in the project have received training in Japan."

- To some extent: "Experiences of CIs of different levels. In some cases, second[dary] ed[ucation] teachers have been dispatched, yet they have no experience as CIs."

1-2. Accomplishment in training in Japan

[1]Very much [1]To some extent [ ]Hardly

Reasons/Comments:

- Very much: "A lot of maths and science content knowledge has been learnt through the project. The skill of developing learning programmes and learning aid has been developed [by] CIs."
- To some extent: "Some of the training might not have been relevant and appropriate. A regular review is necessary."

2. CIs are capable to support Heads of Department (HODs)/Subject Heads (SHs) in maths/science.

*Please answer with reference to the following indicators:

2-1 CIs demonstrate material development skills

[2]Very much [1]To some extent [ ]Hardly

Reasons/Comments:

- Very much: "*Learning programmes have been developed and CIs are continuing with this development.*"
- To some extent: "The skill varies and, while there is good progress, more training and experience needed."

2-2. CIs can conduct 5-day workshop.

[2]Very much [1]To some extent [ ]Hardly

Reasons/Comments:

- Very much: "District workshops were conducted for HODs according to the plan."
- To some extent: "With support from Japanese, U of P and H/O. The time is approaching where [this] support is to be slowly decreased for self-sustainability."

3. HODs/SHs are capacitated to conduct a school -based in -service training session

*Please answer with reference to the following indicators

3-1. HODs/SHs conduct a school -based in-service training session regularly (once a month or more)

[1]Very much [3]To some extent [ ]Hardly

Reasons/Comments

- Very much: "School-based workshops are conducted on a regular basis."
- To some extent: "Again different levels of capacity depending on various factors, including length of period in MSSI. Good practices have also been recorded."

3-2. HODs/SHs demonstrate coaching skills

[1]Very much [3]To some extent [ ]Hardly

Reasons/Comments

4. Supportive environment for School-Based In-Service Training in each school is created.

*Please answer with reference to the following indicators

4-1. Each school conducts school -based in-service training under its school policy.

n=4

[1] Very much [2]To some extent [ ]Hardly

Reasons/Comments

- Very much: "Schools do conduct workshops based on 'policy'! This policy may or may not be on paper."
- To some extent: "Conditions differ, including size of school and therefore staff, level of development (both school and HOD), and admin support. Length of participation in MSSI, too."

4-2. Principals attend the first day of the 5-day workshop

[3]Very much [ ]To some extent [ ]Hardly

Reasons/Comments

"Principals give report on INSET activities in their schools."

"good response from principals"

5. MDE is capacitated to plan, monitor and evaluate project activities

*Please answer with reference to the following indicators

5-1. MDE staff understands the significance of monitoring and evaluation system

[3]Very much [ ]To some extent [ ]Hardly

Reasons/Comments

"MDE staff has good understanding of monitoring and evaluation, although the actual monitoring is not yet done at a satisfactory level."

5-2. The numbers of times Monitoring and Evaluation conducted

[ ]Very much [2]To some extent [ ]Hardly

Reasons/Comments

"Reports are required monthly from CIs and quarterly for MSSI activities."

"Because of tight programmes, not easily done. Training in this aspect also needed."

5-3. More than 90% of Quartely Progress Report is collected regularly.

[1]Very much [1]To some extent [ ]Hardly

Reasons/Comments

- To some extent: "Not all reports are sent on time to CIs and to coordinator teams but all reports are always available at the 5-day workshops."

6. Teachers Centres (TCs) are utilized effectively by teachers for the Project Activities..*Please answer with reference to the following indicators

6-1. HODs/SHs conduct a school -based in-service training session regularly (once a month or more)

[1]Very much [ ]To some extent [1]Hardly

Reasons/Comments

- Very much: "The majority of schools indicate that they are conducting these sessions regularly."
- Hardly: "The issues of school based in-set still need to be developed for this stage to be reached. Teachers confidence is not yet at that level."

6-2. More teachers come to use TCs for Training Sessions.

n=4

[ ]Very much [2]To some extent [ ]Hardly

Reasons/Comments

"The TC is not yet fully functional in as far as lending out equipment and the equipment (MSSI) is not yet at the TC. Teachers come for computer accessing at the TC and also for workshops."

"Mostly when called by CIs."

7. School database in each district is created

*Please answer with reference to the following indicators

7-1. Database has sufficient coverage of data in terms of secondary education.

[1]Very much [1]To some extent [1]Hardly

Reasons/Comments

- Hardly: "Training of CIs on computer literacy still needed for most CIs"

7-2. Databse is maintained and updated.

[ ]Very much [1]To some extent [ ]Hardly

Reasons/Comments

"The database is kept at Head Office and updated as the new districts join the project."

8. Resources for school-based in-service training are developed.

8-1. Materials and activities are prepared and managed by CIs.

[2]Very much [ ]To some extent [1]Hardly

Reasons/Comments:

- Very much: "These are done at workshops (both CI and HOD)."

9. Each school is capacitated to develop own learning Programs.

*Please answer with reference to the following indicators:

9-1. Each school develops at least one Learning Programs each year.

[3]Very much [ ]To some extent [ ]Hardly

Reasons/Comments:

"Several sessions have been held on development of learning programmes."

10. Educators are equipped with a sound understanding of maths/science subjects.

*Please answer with reference to the following indicators

10-1. The percentage of educators who obtained diploma during the Project Period.

[ ]Very much [1]To some extent [1]Hardly

Reasons/Comments

- To some extent: "The diploma programme is still on."
- Responded with N/A: "The teachers are registered for 3 years for the FDE and therefore none have yet received diplomas through the MASP project."

3. Impact of the Project

Q8. To what extent has the Overall Goal 1:" Grade 8 and 9 learners in the Province acquire enhanced

n=4

skills in mathematics and science." been achieved?

[2]Very much, [1]To some extent, [ ]Hardly

Reasons/Comments

- To some extent: "At this stage, the prospect has [been] partly achieved due to its staggered implementation schedule."

Q9 .For those who chose "To some extent" or "Hardly", do you think the overall goal will be achieved in the future?

[2]Yes, [ ]No

Reasons/Comments

"The setting up of a school based INSET programme is still being pursued. [. . . I]t depends on other variables."

Q10. For those who chose "No", what is necessitated to achieve the overall goal?

Comments

By respondent who chose 'Yes': "1. Analyze the institutional environment. 2. Enhance implementation to be at par of levels. 3. Factor in exceptional situations and cases."

Q11. To what extent has the Overall Goal 2:" The quality of teaching in mathematics and science in the Province is improved through educator's enhanced teaching skills and subject knowledge." been achieved?

[3]Very much, [1]To some extent, [ ]Hardly

Reasons/Comments

- To some extent: "The project has not dealt with INSET only but with content as well. There is slow progress, but the academic background of the teachers slows this progress greatly."

Q12. For those who chose "To some extent" or "Hardly", do you think the overall goal will be achieved in the future?

[1]Yes, [ ]No

Reasons/Comments

"It is necessary to focus on the positive. With the diploma course and other related programmes, progress should be made."

Q13. For those who chose "No", what is necessitated to achieve the overall goal?

Comments

Q14. As a result of the Project implementation, did any unexpected things, or positive/negative effects occur to you, to the community, to South African society?

[1]Yes, [ ]No

Reasons/Comments (if "Yes", please specify the effect.)

Sustainability of the Project

n=4

Q15. Are you confident that you and MDE staff will conduct the current activities without the support of Japanese Experts?

[1]Very much, [1]To some extent, [ ]Not sure

Reasons/Comments:

- To some extent: "A lot has been done, but there is still a great deal more necessary up to the level of self sustenance."

Q16. Do you think the MDE will have no problems in terms of budget in future?

[1]Yes, [ ]No, [1]Not sure

Reasons/Comments:

- Not sure: "The budget of process is not always determined by needs but by the total amount allocated to the department."

Thank you for your cooperation.

If you have other suggestions and comments on the Project, please write in below.

Suggestions and Comments:

"The prospect has been very useful in laying a basis and a foundation for INSET. Due to its staggered nature of implementation, it requires future support to fully roll out and consolidate, but also to capitalize on the findings based on the outcomes. We recommend an extension."

南アフリカ国「ムプマランガ州中等理数科教再訓練計画」
終了時評価調査質問票
回答者：日本人短期専門家　5名　2002年7月 実施

【プロジェクトの活動の進捗について】
Q1. 成果達成のための活動は予定通り実施出来ましたか。
［5］よく出来た［0］だいたい出来た　［0］出来なかった
理由：

- よく出来た一日本研修：CI ワークショップ-HOD ワークショップの一連のサイクルがうまく動くようになった。特にCIが自主的に計画運営が出来るようになった。
- よく出来た一INSETのシステムをゼロから作った。

Q2. 活動項目は適切に設定されていましたか。
［4］適当であった［1］だいたい適切であった［0］適切でなかった
理由：

- だいたい適切であった一プロジェクトスタートはじめはお互いの理解が不十分な面があり、日本研修にしても南アからの来日者の意向と日本側の準備にちぐはぐな面もあったが、次第にそれが適合するようになってきた。

【日本側投入の適切さ　機器】
【C/Pの日本国内研修（国別特設研修）について】
Q3. 日本への研修員受入れ計画(国別特設研修)につき、回答願います。
派遣人員数：［5］適切であった［0］だいたい適当であった［0］適切でなかった
理由：

- 適切であった一教材作成、開発にしても３～５名くらいの少人数グループは計画的で動きやすかった。

派遣者の人選：［4］適切であった［1］だいたい適当であった［0］適切でなかった
理由：

- 適切であった一それぞれに意欲的な人が多く、作業がスムーズに進んだ。

派遣期間：［4］適切であった［1］だいたい適切であった［0］適切でなかった
理由：

- だいたい適切であった一１１月～１２月の時期も公務の多い時期ではあるがそれより後には不可能（大学入試、大学院入試との関連で）なので。

成果達成への直接的な貢献度：［5］大変貢献した［0］ある程度貢献した[0]ほとんど貢献していない
理由：

- 大変貢献した一毎回の CI ワークショップ、HOD ワークショップの主要な教材が日本研修の中で取り上げられた内容であり、大いに貢献していると思う。

【南アフリカ側投入の適切さ　土地、建物、施設について】
Q4.南アフリカ側の投入（土地、建物、施設）につきR/D通りに投入されましたか。
［2］投入された［1］だいたい投入された［0］投入が不足していた
(投入が不足していた場合、何が不足していたか具体的に示してください。)

- 投入された一ワークショップの運営にも土地、建物。施設も確保されており、細かな文具類まで配慮されていた。
- だいたい投入された一殆ど既存施設を利用していたと理解している。

Q5. 南アフリカ側はプロジェクトの予算確保に協力的でしたか。
［1］協力的であった［3］だいたい協力的であった［0］協力的でなかった
理由：

- だいたい協力的であった一南ア側側関係者の旅費は全額負担していると聞いている。

Q6. 南アフリカ側予算上の問題がなくプロジェクトを進行させることが出来ましたか。
［1］出来た［3］だいたい出来た［0］出来なかった
理由：

Q7. 南アフリカ側が準備したプロジェクトに必要な施設(土地（面積、場所、周辺環境)、建物、施設・設備)につき適切でしたか。
土地：［2］適当であった［3］だいたい適当であった［0］適切でなかった
理由：

- 適当であった一距離的な移動は大変だが、参加者(HOD 等)のことを考えると適当。治安上の問題もない。

建物：［3］適当であった［0］だいたい適当であった［0］適切でなかった
理由：

- 適当であった一会議室、作業室なども良好(CI ワークショップ)

施設・設備：［2］適当であった［1］だいたい適当であった［0］適切でなかった
理由：

- 適当であった一元教員養成カレッジ、ティーチャーズセンターなどの建物、設備が使用できた。しかし、特にコピー機、印刷機などが無かったり　故障していたり、不便だったこともある。

【南アフリカ側投入の適切さ　スタッフ（C/P、コーディネーターチーム、CI 等）の配置について】
Q8. スタッフの能力・配置は適切でしたか。
C/P の能力：［3］適切であった［2］だいたい適切であった［0］適切でなかった
理由：

- だいたい適切であった一CI などについては、専門教科能力という点ではやはり問題があるが、これは仕方ないことと考える。

C/P の配置：［4］適切であった［1］だいたい適切であった［0］適切でなかった
理由：

- 適切であった一但し、プロジェクトの組み立て上、専属のカウンターパートは居ないので、C/P が他の業務にも多忙という傾向は有ったかも知れない。

南アフリカ側のコーディネータチームの能力：［4］適切であった［1］だいたい適切であった［0］適切でなかった
理由：

南アフリカ側のコーディネータチームの配置：
［3］適切であった［2］だいたい適切であった［0］適切でなかった
理由：

- だいたい適切であった一全体的に適切であるが、それぞれが MSSI 専門家に対応するという体制ではないため、仕事のやりくりに苦労している様子である。しかし、現状では良くやっているという感想を持つ。
- だいたい適切であった一各チームのメンバーはそれぞれ多忙では有るものの、チームを結成し、定期的に会合を持つところは評価できる。

プレトリア大学側のスタッフの能力：
［4］適切であった［0］だいたい適切であった［1］適切でなかった
理由：

- 適切であった一MSSI の方向性を示し、MSSi をサポートしている点は大変良好である。

プレトリア大学側のスタッフの配置：
［0］適切であった［3］だいたい適切であった［2］適切でなかった
理由：

- だいたい適切であった－理科は十分だったが数学は足りなかった。
- 適切でなかった－MSSI 全体については上記のようにすばらしいものがあったが、プレトリア大学のスタッフが科学（理科）教育専門であり、数学に関しては直接的、継続的にサポートできる体制ではない。今後の大学再編に期待する。
- 適切でなかった－絶対的人数が少ない。数学は結局の所、適任者を現在まで確保出来なかった。

南アフリカ側スタッフによる成果への貢献度：
［5］大変貢献した［0］ある程度貢献した[0]ほとんど貢献していない
理由：

- 大変貢献した－6～7割は南アの頑張りという印象。

Q9. MDE の職員、スタッフの雇用条件は南アフリカ国内の水準で満足行くものか
［2］満足できる［1］ある程度満足できる［0］水準として低い
理由：

- 満足できる－詳細は知らないが、生活水準は高い。

【ムプマランガ州教育省スタッフの意欲】
Q10. ムプマランガ州教育省スタッフは（CMD、 コーディネータ・チーム、CI 等)、成果を達成するための意欲を示し、努力しましたか（日常の勤務態度など)。
［4］とても努力した［1］努力した［0］努力は感じられなかった
理由：

- とても努力した－日本チームの都合だけから言うと、不都合も時に有るが、全体としてMSSIのためによく努力していると思われる。
- 努力した－勿論常にもっと努力して欲しいという期待はある。

Q11. また、プロジェクト開始当初と比べて知識、技能、勤務意欲に変化が見られましたか
［5］大きな変化が見られた［0 ］多少の変化が見られた。［0］変化は感じられなかった
変化の内容：

- 大きな変化が見られた－教員研修の具体的な展開について見通しを持って取り組めるようになった。
- 大きな変化が見られた－ワークショップを自主的に運営出来るようになり自覚が出てきた。

[目標達成度に関して]
Q12. 「プロジェクト目標：［A school-based in -service training system in the Mpumalanga Province is established.］は現時点でどの程度達成されたと考えますか。
［1］達成された［4］有る程度は達成された［0］達成されていない
理由：

- 有る程度は達成された－調査にも見られるように、かなりの学校で定着しつつあることが挙げられる。但し、本当はその中身が大切であり継続的、計画的な実践に重点を置きたい。

Q13. プロジェクトの成果はどの程度達成されたとお考えですか。(番号は評価用 PLM に対応しています)
1.CurriculumImplementors (CIs) have basic knowledge and skill to work as coordinators through the training in Japan
［3］達成された［2］有る程度は達成された［0］達成されていない
理由：

- 有る程度は達成された－回を重ねるごとに次第に焦点が絞られ、目標、内容が明確に

なってきたので、達成度が高くなってきた。

2. CIs are capable to support Heads of Department (HODs)/Subject Heads (SHs) in maths/science.
［1］達成された［4］有る程度は達成された［0］達成されていない
理由：

- 有る程度は達成されたーCI は所期の目的を達成するために、努力できているが、HOD（の一部）には、数学の基礎的内容が身に付いていないため、教材が表面的にしかとらえられていない面が有る

3. HODs/SHs are capacitated to conduct a school -based in -service training session
［0］達成された［5］有る程度は達成された［0］達成されていない
理由：

- 有る程度は達成された一次第に定着しつつあるが、学校規模などにより、単独の学校では実施が困難な面があり、今後クラスターでの INSET が期待される。

4. Create supportive environment for School-Based In-Service Training in each school
［0］達成された［5］有る程度は達成された［0］達成されていない
理由：

- 有る程度は達成されたー校内研修の経験が殆どなかったなかで、その必要性が次第に理解されるようになってきたが、今後の課題も多い。

5. MDE is capacitated to plan , monitor and evaluate project activities
［1］達成された［4］有る程度は達成された［0］達成されていない
理由：

- 有る程度は達成されたー日本研修—CI ワークショップ-HOD ワークショップのサイクルが確立できた。しかし、HOD ワークショップの時間等、研修時間の確保には問題が有る。もとより、これには、教員の員無、研修の位置づけなど、国としての制度的な見直しが必要なことでは有るが。

6. Teacher Centres (TCs) are utilized effectively by teachers for the Project Activities.
［0］達成された［4］有る程度は達成された［0］達成されていない
理由：

- 有る程度は達成されたーＴＣに配属されている CI はよく働いている。しかし、スタッフ不足、CI と各学校との関係等整備すべき課題は有る。その中では、TCs は良く機能している。
- 有る程度は達成されたーワークショップ時、また、熱心な先生が利用する。

7. School database in each district is created
［3］達成された［2］有る程度は達成された［0］達成されていない
理由：

- 有る程度は達成されたー基本的なデータは必要と有れば入手できるが、各学校における教育糧員などは整備されているとは思えない。
- 達成されたー当初から立派な EMIS が州レベルでは作成されている。

8. Resources for school-based in -service training are developed.
［2］達成された［3］有る程度は達成された［0］達成されていない
理由：

- 有る程度は達成された一理数科の教材については、参加校にとっては、かなりの質量のリソースは活用できる形になってきた。しかし系統的、計測的な活用できる状況までにはなっていない。

9. Each school is capacitated to develop own learning Programs.
［0］達成された［3］有る程度は達成された［1］達成されていない

理由：

- 有る程度は達成された―MSSI でのワークショップで扱った教材はかなりの範囲、分量になっており、トピックス的には指導計画の中に取り入れられつつある。しかし、国の政策である Curriculum２００５への対応と合わせて考えるとき、部分的にとどまっていると考えざるを得ない。
- 有る程度は達成された―各学校レベルまでの効果は？

10. Educators are equipped with a sound understanding of maths/science subjects.
［0］達成された［4］有る程度は達成された［1］達成されていない
理由：

- 有る程度は達成された―部分的にとどまっている。
- 専門能力の向上は容易ではない。

[インパクト（プロジェクトを実施した結果、どのような正負の変化が直接的、間接的に現れたか.Overall Goal は、"予想された正のインパクト" として扱う。）
Q14. 横断的視点(政策、技術、環境、文化･社会、制度･組織、経済･財政面)で、プロジェクトはどの程度影響を与えましたか。
(1) 政策面(国や地方の教育政策への影響等)での影響
影響度：［1］大きい［1］多少あった［0］ない［3］分からない
理由：

- 州全地区を対象としたワークショップ(CI, HOD)が年三回実施出来るようになり、参加校における校内研修の状況も把握できるようになっている。

(2) 文化･社会面(例：プロジェクト関連スタッフの社会的ステイタスの変化、南アフリカ人の理数科分野へ関心が高まった、学校の周辺のコミュニティや父兄においても本件実施による効果が見られますか（例えば、教育面での雇用吸収力増大、日本に関する理解が深くなった等)
影響度：［3］大きい［2］多少あった［0］ない［0］分からない
理由：

- 大きい―最初は HOD ワークショップにも送れてきたり、終了前に帰ってしまう例もかなりあったが、その目的、内容、方法（時間的なものも含めて）に理解が高まった。また、その場に日本人が絶えず付き添っていることに信頼感が深まったと言える。

(3) 制度･組織面(例：本件の運営体制やプログラム等が、他の教育機関へ影響を与えたか等)
影響度：［0］大きい［2］多少あった［0］ない［3］分からない
理由：

- 多少あった―国の理数科教育の重視を背景に実施した MSSI への取り組みと通して、理数科教育担当 CI, HOD の役割が重視されるようになってきている。他の教育機関に関しては不明だが、教員養成機関の再編にも何らかの影響を起こしているかも知れない。

(4) 経済･財政面(例：プロジェクト内部、その他関係機関、社会への経済的効果等)
影響度：［0］大きい［2］多少あった［0］ない［3］分からない
理由：

- 多少あった―教育省で理数科備品・教材を全学校に入れる構想が出ている（プロジェクト関係)。

Q15. 上位目標1:「Grade 8 and 9 learners in the Province acquire enhanced skills in mathematics and science.」はどの程度達成しましたか。
達成度：［0］達成した　［1］ほぼ達成した
　　［5］今達成していないが、見込みはある　［0］達成しないと考える
理由：

- 今達成していないが、見込みはある―授業参観とその後の授業研究会を通して、教師が指導内容の理解や、指導方法を、生徒が学習方法を身につけつつある。実験、実習、

ワークシートの利用や、小集団（グループ）学習等が展開され、発表、ディスカッションも活発になってきている。その意味で、MSSI 参加校では、上位目標が達成されつつあるのではないか。

- 今達成していないが、見込みはある一生徒にインパクトが有るところまでまだカスケード方式が下りていない。

Q16. 上記質問の“達成しないと考える”と回答した方に対し、上位目標はどのようにするべきでしたか。また、達成しない原因は何ですか。
理由：

Q17. 上位目標 2:「The quality of teaching in mathematics and science in the Province is improved through educator's enhanced teaching skills and subject knowledge」はどの程度達成しましたか。
達成度：［0］達成した　［2］ほぼ達成した
［3］今達成していないが、見込みはある　［0］達成しないと考える
理由：

- 今達成していないが、見込みはある一CI, HOD ワークショップ及び校内研修、及びそれらに基づく授業実践を通して、次第に達成しつつあるといえる。但し、これは MSSI 参加校についてのみであり、個々の教師のバラツキは大きいように思える。

Q18. 上記質問の“達成しないと考える”と回答した方に対し、上位目標はどのようにするべきでしたか。また、達成しない原因は何ですか。
理由：

Q19. 本件プロジェクトにより MDE スタッフの生活(横断的視点で)に何か変化が感じられたか。
［3］感じられた［2］ある程度感じられた［0］特に感じられなかった
理由：

- 感じられた一最初は儀礼的な対応であったように思われるが MSSI が日常化するにつれて、業務の一部とみる傾向が強まってきているのではないか。有る意味では定着化の過程とも思える。
- 感じられた一時間を守るようになった（集合時間など）
- ある程度感じられた一時間厳守でワークショップが運営される。

[プロジェクトの妥当性に関して]（プロジェクト開始時に設定された「プロジェクト目標」「上位目標」は評価時においても目標として意味を持つか）
Q20. プロジェクト開始当初に設定されたプロジェクト目標「A school-based in-service training system in the Mpumalanga Province is established.」は、現時点で南アフリカ社会のニーズにどの程度応えた目標であると考えますか。
［5］よく応えている［0］ある程度応えている［0］応えているとは言えない
理由：

- よく応えている一事前調査の段階で、学校内のミーティングの回数は極端に少なく、教師の意識改革と授業改善のためにもこのプロジェクト目教が妥当と考えた。これが次第に定着しつつある現在から見ても、この目標の設定は妥当であり、妥当性をもつものと考える。また、授業改善のために school-based INSET の考え方は、南アフリカの学校全体に重要な意味を持つと考える。

Q21. プロジェクト開始当初に設定された上位目標 1「Grade 8 and 9 learners in the Province acquire enhanced skills in mathematics and science.」について、
（1）現時点で南アフリカ社会のニーズに応えた目標であると考えますか。
［5］よく応えている［0］ある程度応えている［0］応えているとは言えない
理由：

- よく応えている一Grade 8、9 の段階で基礎的な学力を身につけていることはその後の学習、職業訓練にとって重要なことであり、ひいては南アの社会のニーズに応えることになると考える。

Q22. “応えているとは言えない”と回答した方に対し、上位目標はどのようにするべきだったと考えますか。
ご意見：

Q23. プロジェクト開始当初に設定されたプロジェクト上位目標2 「The quality of teaching in mathematics and science in the Province is improved through educator's enhanced teaching skills and subject knowledge」は、現時点で南アフリカ社会のニーズにどの程度応えた目標であると考えますか。(開始当時はプロジェクト目標でしたが、今回上位目標に変更しています)
［5］よく応えている［0］ある程度応えている［0］応えているとは言えない
理由：

- よく応えている一教育の質の改善のためには、教師の力量（専門的な領域における基礎的な力量、指導技術）は欠かせないものである。このことは南アフリカの国、社会の要請と完全に一致している。事前調査からも教師の力量不足がいろいろな面で明らかになっている。

Q24. “応えているとは言えない”と回答した方に対し、上位目標はどのようにするべきだったと考えますか。
ご意見：

5. ［自立発展性］(援助終了後、被援助国の期間・組織がどれだけプロジェクトの正の効果を維持することが出来るか。組織、財政、技術、人材育成などの面から)
Q25. 現状のMDEの運営活動から、自立運営できるような能力がありますか。
［3］ある［2］ある程度ある［0］ないと考える
理由：

- ある程度ある一上記の目標とMDEの体制を考えるとき、日本側、教育省、プレトリア大学の実施主体の組織がそれぞれに、また、総体的にうまく動いてきて、教員の力量を高める考え方と方法が次第に定着してきている。また、教師の力量形成のための教員養成の再編、プレトリア大学、UNISA他の大学の支援体制も整いつつある。こう考えるとき、自立運営の基盤は整備されてきたと考える。しかし、現職教員の力量には、かなりのバラツキがあるため、かなりの中・長期の視点に立たなければ「有る」とは答えられない。
- ある一財政は不安が少ない。

Q26 MDEスタッフ 或いはHOD/SHsへの経験移転（能力の向上）につき、どの程度果たされたと考えますか。
［0］された［5］ある程度された［0］されていないと考える
理由：

- ある程度された一個人的には移転されたとは思わないが、日本人専門家としては経験の提供が出来た。

Q27. MDEスタッフを中心として、MSSI終了後、理数科教員再訓練の活動は、南アフリカ側により、自立的、継続的に運営されるでしょうか。
［3］可能である［2］ある程度可能である［0］可能でないと考える
理由：

- 可能である一そのためには、人的な投入、ハード、ソフト両面にわたり、計画的、継続的に導入、強化していく政策、試作の実施が前提である。
- ある程度可能である一他のアフリカ諸国と異なり予算は有る。

Q28. “可能でないと考える”と回答した方に対し、経験の共有、或いはプロジェクトの活動はどのように実行するべきだったと考えますか。
ご意見：

Q29. 今後 MDE は財政上問題なく運営出来るでしょうか。
［2］出来る［2］何とか出来ると考える［0 ］出来ないと考える
理由：

- 何とか出来ると考える一教育財政は十分でないと聞く。また、前年度一部には予算の全ては執行出来なかったと聞くが、教育予算の計画的執行も次第に出来るようになっていくのではないか。
- 出来る一財政上の問題はないであろうが、政策上の問題は？

Q30. MDE スタッフの定着（MDE で MSSI に関連する勤務を継続）について
［2］ほぼ全員が定着している［3］ある程度離職はあるが大勢に影響はない［0］定着度が低く影響が看過出来ない
理由：

- ある程度離職はあるが大勢に影響はない一南アも大きな変動社会の中にあり、MDE の機構改革によるスタッフの異動、CI の上昇志向など、一部の離職もある（今後もあろう）が、MSSI の意義、信頼性は次第に定着してきており、今後も継続されるものと確信している。

（前問で定着度が低いとお答えになった場合）
Q31. MDE スタッフの定着について、「定着度が低く影響が看過出来ない」場合、どのような原因が有るとお考えですか。

9. Evaluation Team Memo No.1 ～4（先方との協議用）

JICA Evaluation Team July 11, 2002

Evaluation of the MSSI Project

Introduction

More than two and a half years have passed since the Mpumalanga Secondary Science Initiative (MSSI) Project started on the basis of a tripartite partnership among the Mpumalanga Department of Education, University of Pretoria and JICA. As the end of its three-year term is approaching, JICA has dispatched an team* to (1) conduct an evaluation of the project, (2) to identify any shortcomings which hamper the establishment of in-service training practice in schools, and (3) to draw conclusions and recommendations to serve as a guide for the successful completion of the project and as the foundation for a possible 2nd phase of the project.

The present note presents a tentative assessment and inferences by the team as it is completing a brief inquiry mission to Mpumalanga. A full draft report will be sent to the two partners in for comments before its finalization. Dr. Zenda Ofir, who is working as an external evaluator, will be completing an independent report towards the end of August, which will similarly be shared with the partners in its draft form.

Tentative assessment by the Evaluation Team

On MDE's 2nd draft memorandum on MSSI Phase 2

The Evaluation Team appreciates the efforts of the Mpumalanga Department of Education to elaborate the future shape of MSSI based on the continued cooperation of the three collaborative partners, including JICA. In the process of the work being done by the Evaluation Team, some new considerations and questions have come up that relate to Department's 2nd draft memorandum, especially concerning the discussion of Project Approach, in which the project's 'gaps' are listed and discussed (p. 2 of that memorandum). The Team would like to share its views on them with the Department and UP, as follows:

1. The Team agrees entirely with the points mentioned under 'Learning Facilitation Skills' and 'Educator Ongoing Development and Support'. Based on the work being done so far to build the system of school-based INSET for M & S teachers, greater emphasis would have to be made not only to improve the quality of these activities but also bring the results of these INSET activities to the classrooms. The shift to educator support at the cluster level makes sense in this respect.

2. Regarding the discussion of 'Whole School Development Approach', the Team shares the concern of the Department and also recognize that the MSSI gains may not be sustained if they are not integrated into a school's development agenda. The Team has also found that in some schools where the school management, especially the principal,

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*The team consisted of the following individuals:
Leader: Dr. Toshio MURATA (JICA)
Members: Prof. Masafumi NAGAO (Hiroshima University); Mr. Satoshi KADOWAKI (JICA); Mr. Hideaki HIGASHINO (Consultant)
External Evaluator: Dr.Zenda OFIR (Evalnet)

sees the value of the MSSI school-based INSET, all-school INSET activities have been held. The Team, however, wonders how the integration process could be structured. The MSSI so far targets only the M & S teachers, and by so doing has managed to generate some impact. It would seem difficult to add a 'whole school development' to a M & S project. Perhaps the essence of this discussion is that in the future more efforts need to be made in MSSI to engage the school management and, in so doing, stimulate their thinking on whole school development.

3. Regarding 'Further Dimploma in Education', the Team is entirely in agreement with the point made that a customized program for CIs and HODs wishing to upgrade their professional skills should be developed. This is in fact an on-going concern from the beginning of MSSI. In view of the long-term nature of the efforts needed for such a program, the Japanese side feels that the Department and UP should jointly elaborate a scheme that is most suited to the needs of the aspiring educators. As for the Japanese side, JICA has offered two MSSI educators opportunities to do graduate work in Japan and will continue to do so if suitable candidates are recommended.

4. Regarding 'Market Related Skills', the Team has a few questions. Does the Department think of market related skills for Senior Phase graduates or for FET Phase graduates? When the enrollment ratio for Grade 10 is more than 95% in the Province, does it make sense? If the provision of market related skills is to be thought of in terms of adding 'technology' to M & S so far covered, is there already a plan at the FET Phase for this? Further still, in practicality, what could market related skills mean? Vocational skills in the traditional sense, like carpentry, metalwork, accounting, or IT skills as some would insist? The Team feels that some basic thinking is needed on this topic.

5. The Team agrees with the section on 'Phase 1 Round Off'. The three partners should discuss how to reach with the present structure of MSSI those schools with Grades 8 & 9 which are yet to come into the project.

Some inferences for a possible 2nd Phase of the MSSI project

On the basis of the evaluation study conducted, the Team is making some inferences for a possible 2nd Phase of the MSSI project, which will constitute the main elements of the Team's conclusions and recommendations. The following points may be shared on a tentative basis.

1. The Team believes that, although the MSSI project has managed to build a good foundation of a Province-wide school-based INSET system for M & S teachers, the functioning of this system still needs improvements in terms of:
   (1) Greater impact on classroom teaching through more intensive support for HODs and teachers
   (2) Wider sharing of best practices in school-based INSET through more purposeful monitoring system
   (3) Extension of grade coverage to include M & S teachers up to and including Grade 12

2. The Team thinks the Province-wide approach should be maintained, but based on a combination of support for cluster initiatives and Regional-level sharing meetings for all schools. This could be implemented through the following measures:
   (1) Development of cluster plans and their implementation by cluster-leading HODs, supported by CIs
   (2) Scheduled cluster activity support by UP and Japanese experts
   (3) Holding of annual regional meetings for sharing of the cluster and school-based

INSET best practices

3. The Team believes that strengthening of the regional support structure for cluster and school-based INSET activities is essential, including:
   (1) Improved utilization of Teachers' Centers
   (2) Strengthening of management support at circuit- and school-levels
   (3) Special support scheme for rural farm schools

4. The Team would recommend a 3-year 2nd Phase of the MSSI Project, to start in April 2003. The period from November 2002 to March 2003 should be considered as a Transition Stage from Phase 1 to Phase 2, during which the following tasks should be carried out:
   (1) To provide further support for those schools which are yet to participate in the MSSI project
   (2) To prepare jointly the project implementation plan for Phase 2
   (3) To carry out a basic study on how to deal with the question of 'market related skills'
   (4) Trial implementation of new schemes for study-cum-training missions in Japan

5. The Team would support the idea of holding an open symposium in Pretoria to inform the national audience about the achievements and seek a wider support for the future of the MSSI project, especially to provide an opportunity for the CIs and HODs to present their experiences and views.

Evaluation Mission Memo: No. 1

Achievements, shortfalls and Japanese contributions in the MSSI project:
Assessment by a Japanese Project Team member

July 4, 2002
M. Nagao

The present note is prepared to add to the Evaluation Mission a 'Japanese insider view' concerning the assessment of achievements, shortfalls and Japanese contributions in the MSSI project during the first two and half years of its implementation. It does not necessarily reflect the opinions of all the people who have been involved in the Japanese Project team, nor the official views of JICA.

1. Main achievements

The MSSI project started in November 2002 with the purpose to improve the 'quality of teaching in M & S through enhancement of the capacity and experience of teachers' in order to pursue the goal of enhanced learning and skills in M & S for secondary students in the province. The main achievements made during the first two and a half years of implementing the project may be summarized, as follows:

(1) The principal approach adopted has been one of promoting the development of a Province-wide system of school-based INSET for M & S teachers.[1] After two and a half years of the project implementation, the project has reached all 10 of the Province's Districts and includes more than 310 schools, covering around 60 % of the secondary schools. Around 45~50 of these schools (i.e., roughly 15 % of the total) have established a regular practice of such activities.[2] According to the observation of the MSSI Curriculum Implementers (CIs) working with the MSSI schools, these schools may be distinguished by a combination of active HOD leadership, good teacher participation and solid school management (e.g., Principal's) support for such activities. The CIs also estimate that another 80~90 schools (i.e., 25~30 %) are implementing such activities occasionally on the strength of active HOD leadership and good (or. at least, some) teacher participation, but without adequate school management support. These activities by individual schools have been complemented by cluster-level activities, although their extent is still limited. The monitoring system established in order to capture these activities has become operative, although much more improvement of its functioning is desired especially for sharing of the learning that takes place. Based on these evidences, it may be safely said that a good beginning has been made towards the establishment of a Province-wide system of school-based INSET for M & S teachers in Mpumalanga.

(2) A related, significant gain has been the development and diffusion of the concept and

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[1] The pursuit of this approach was inserted into the initial agreement document as a subsidiary project purpose. It may be added that the adoption of this approach reflected the view shared in the project planning stage, especially between JICA and Mpumalanga Department of Education, that this would not only meet the Department's long-term strategy but also enable utilization of Japanese INSET experiences. The visits by some of the senior officials of the Department to Japan prior to the formulation of the project for exposure to Japanese educational experiences was instrumental in shaping the common perspective.

[2] For data supporting the statements in this paragraph, see Evaluation Mission Memo No.4 by Nagao. Though not stated in the project document explicitly, there was a general consensus that 'regular' holding of the INSET activities meant 'some activity on a monthly basis'. In reality, there are some schools which are hold such sessions much more than once a month.

practice of 'collaborative group work by teachers for lesson improvement'. The primary hint for this work was given by the Japanese teachers' group practice of 'lesson study'.[3] The MSSI CIs, who observed the practice during their study missions to Japan, developed it as a principal method for conducting the school-based INSET. To help the schools understand how this method may be put into actual practice, several CIs jointly prepared and published, with the help of UP and the Japanese universities, a guidebook, entitled "Peer Teacher Learning: How Teachers Can Help Teachers" (MSSI Guidebook No. 2, March 2002). All the participating schools have been exposed to the concept and practice of this method through District-level workshops. One important side effect of the conducting of the school-based INSET using this method has been to stimulate the teachers' interest in the class-work. Videotaping of the lessons at these INSET sessions has given an added impetus to such interest; nearly all the teachers whose demonstration lessons were taped requested the tapes to view their own conduct of the lesson and class management.

(3) Another important spin-off effect from the diffusion of the school-based INSET activity by M & S teachers, which should be singled out for its long-term significance, has been its impact on the thinking in the schools about whole school improvement. The teachers in the MSSI participating schools have opportunities to hear or learn about the lesson study approach practiced in MSSI through the all-school report back sessions following the MSSI District-level workshops.[4] The increasing familiarity of teachers in using the lesson study instrument through MSSI has led some schools, especially those at which principals have taken interest in the project, to consider peer teacher learning as an effective way to improve classroom teaching in all subjects.

(4) A second key approach of the MSSI has been a collaborative partnership among three project promoters – the Mpumalanga Department of Education (MDE), the University of Pretoria and JICA. As was originally envisaged, the tri-partite arrangement evolved into a project implementing structure with a fairly clear-cut division of labor among the three parties involved. In addition, since the MSSI project had to carry out M & S teacher retraining through training workshops based on a cascade model and parallel encouragement of school-based INSET activities, the MDE component was to engage officials at multiple levels, including not only the provincial (or department headquarters) level but also the district and school levels. The smooth working of the entire structure was predicated upon the pivotal role to be played by a core of Curriculum Implementers (CIs). As it turned out, a corps of slightly more than 20 CIs developed as a mission-conscious group endowed not only with organizational competence but also with collaborative group spirit and collective confidence. They can now organize District-level training activities without relying on much outside help, which was not the case at the initial stage of the project when the UP and Japanese professors and the senior officials from the Department Headquarter had to intervene in planning and organizing such activities. They now engage quite spontaneously, in mutual help for running workshops and joint work, cutting across the assigned District boundaries.[5]

(5) One important element in the collaborative partnership which was not explicitly identified in the original project scheme but which came to have a strong impact on the project, especially its implementation, has been the support provided by the District Education

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[3] In a school or a group of schools teachers would meet to jointly develop a lesson plan, arrange to have one teacher teach the lesson in a class, with the other teachers observing, and later hold a conference to critique the lesson with the aim of improving the lesson plan.
[4] More than 50 such sessions were reported as 'all school INSET' in 6 districts. Please see Evaluation Mission Memo No.4.
[5] One good example of the collaborative work by the CIs has been the un-planned, compilation and publication of the two MSSI Guidebooks – one on "Planning and Running Workshops"(No. 1, September 2001) and the other on "Peer Teacher Learning" cited earlier.

Managers, the heads of educational administration in the 10 districts. These managers were invited to take part in JICA local educational administration training course in Japan to observe the Japanese educational experience with a view to enlisting their backing for the project. They responded with deep concern and enduring support. They would act both individually and as a group to speak up for the project and render their authority behind the project. They were particularly helpful in facilitating the organization of District-level workshops by the CIs, and in mobilizing the interest of school principals in MSSI. Their strong presence in the project at the District-level was quite instrumental in establishing the Department's ownership in project implementation. Although the merger of the districts into three regions by the recent change in the Department's structure has dismantled this support mechanism for MSSI, the individuals concerned came to occupy many key posts in the new Regional Administration as well as in the Head Office. Given time even stronger vertical support structure may be created for MSSI with their continued interest in the project.

(6) Participation of UP in MSSI as one of the tri-partite partners, and not as a consultant, was a unique feature of the project, not very common (if not un-paralleled) in JICA history. It was significant in three ways. Firstly, it enabled the Mpumalanga Province, one of the two provinces without a university, to secure sustained support of a domestic academic institution. Secondly, it made the task of the Japanese technical cooperation team easier as the UP provided complementary technical support.[6] The UP team through its research work has also been instrumental in interpreting and explaining the Japanese educational experience, a typical case being their help to the CIs to understand the Japanese experience in INSET, which led to the latter's elaboration of PTL guidebook. Thirdly and finally, their participation tipped the balance of the partnership decisively toward the South African side and helped establish the understanding concerning the division of labor in the project work that the Japanese technical contribution should essentially occur in Japan and that the principal work in South Africa should be done by the two South African partners. On the whole this pattern was realized. This should have much significance from the point of view of project's sustainability.

(7) Finally the MSSI project, with its emphasis on the research and evaluation component, has managed to generate new knowledge and understanding about its own working, which in turn was fed back into the project. The development of the concept of 'Peer Teacher Learning (PTL)' is one concrete product of practical research done initially by the researchers from UP and the Naruto University of Education and further developed by a group of CIs. Hiroshima University has developed the concept of 'mutual learning' model of educational cooperation, which is consciously applied in implementing the MSSI project.[7] The research being conducted by UP, with the cooperation of the Department and the Japanese universities on the implementation of the MSSI project, is helping all the parties concerned in the project to understand the process and impact of the project's interventions, and it is expected that more will be learned as it moves to the final year. The research has helped, and will continue to, improve the effectiveness and

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[6] To give concrete examples, for supporting the CIs who are dispatched to Japan for a study mission, the UP organized a preparatory workshop for them before the mission, and then dispatched its own personnel to accompany the CIs for the mission to serve as a technical guide.

Examples include accompanying by a UP personnel of CIs' study mission to Japan and the linking of JICA Local Educational Administration Training Course for South Africa to the MSSI project, which brought the District Managers to Japan for MSSI-related learning. For a more thorough discussion of this model, please see M. Nagao, "Could Japan be a Good Math and Science Teacher for Africa?", paper presented at the 45th Annual Meeting of the Comparative and International Education Society, Washington, D.C., March 15, 2001.

efficiency of the project.

2. Shortfalls and remedial mesures

(1) The MSSI project will in the end make or break on whether or not, or how, it could improve the quality of classroom teaching of M & S through promotion of school-based INSET activities in each school in the province. The project has identified the development of 'hands-on teaching materials readily usable in the classroom' as a critical activity to ensure that this process takes place smoothly. Many hands-on teaching materials were, in fact, introduced and used during CIs' study missions to Japan and in the workshops for the HODs. However, these materials have not necessarily been prepared systematically. The sharing of these materials has often been quite random. The materials are variously deposited in the hands of individuals, offices and schools concerned, and lack an easy reference system. In other words, the materials, though perhaps developed, are not yet readily available for classroom use. To make up for this shortfall, Naruto University of Education and UP are discussing a scheme to compile and publish a material development document series in cooperation with some interested CIs.

(2) Material development efforts in mathematics was somewhat disadvantaged by the composition of the UP team for the project, whose principal members consisted only of science education specialists. The weakness showed, for example, in technical support to be provided to the CIs for developing lesson plans incorporating the material development work done at Naruto University of Education during the study missions in Japan. Since the Center for Science Education of UP has recently been reorganized to become the Center for Science, Mathematics and Technology Education, with added professional staff for mathematics education, it is hoped that this situation will improve.

(3) As discussed earlier, the MSSI project operated quite strongly at the District level, largely because the CIs assigned to the districts came to function effectively for organizing workshops and other activities and the District Education Managers were supportive. In the initial design of the project, the Teachers' Centers in the respective districts were also expected to 'play a useful instrumental role' both as a training site and as a 'store-house of collective knowledge and experience concerning MSSI in the respective Districts'. However, in reality many of them contribute little more than offering the training sites (and not even that in some cases). The reasons for this shortfall may be sought by the fact that the two conditions stipulated in the project document for the effective functioning of these centers – equipping of these centers with the laboratory facilities and equipment for experiments and strengthening of their management function – were not realized in a timely fashion. Actually these two conditions were inter-linked, so move to implement one could have induced the other. As it turned out, both were delayed.

(4) One of the four principal approaches of the MSSI project is the adoption of an accreditation scheme to be offered by UP to encourage professional development of CIs and HODs. For this the project has had an added advantage of the institution by the National Education Ministry of a bursary scheme for further studies by M & S teachers, in the implementation of which the Mpumalanga Province assigned a clear priority to those involved in the MSSI project. The Department and UP worked out a scheme jointly outside the framework of the MSSI projectand enrolled 150 teachers. Apparently, however, some miscommunication and misunderstanding developed between the two parties over cases of drop-outs and program contents. A review of the working of this scheme is perhaps in order.

(5) In the implementation structure of the MSSI project, the overall managerial function rests with the MSSI Coordinator Team, consisting of the representatives of the

Department, UP and JICA. Because the JICA representative, actually the Project Coordinator for JICA stationed in the Province, is the only person working full-time on the project, the burden sometime fell unequally on the Japanese side. Since the representatives of the other two parties have other duties as well, sometimes they were not able to discharge fully their joint responsibilities. The consequent shortfall in the joint efforts particularly hurt the over-all planning and supervision functions of the Coordinator Team, making less effective the working of the implementation structure of the project. It is clear that, ,of the three, the leading role should be played by the Department, who is the project owner and is vertically linked to the District- and school-levels. This is another area calling for a practical re-appraisal, especially in the light of the Department's structural reorganization.

(6) Finally, the recent restructuring of the Department, in the Headquarter and in the regions, has apparently resulted in a slow-down of the MSSI activities. This is because of the moving of personnel, recruitment for new posts and general uncertainty or unsettledness prevailing in various sections of the Department. For example, the exact functional and geographical location of the MSSI CIs is in question, and new lines of authority must be established for their posts after the structural change. It is hoped that this is only temporary in nature and that the reorganized structure will be more effective in implementing the MSSI project.

3. Critical contributions by the Japanese side

In the MSSI project JICA teams composed mainly of people drawn from Hiroshima University and Naruto University of Education have participated to provide technical support services as any donor agency does in a technical cooperation project. The service provision was done by and large according to the initial project scheme. Since many of the Japanese M & S specialists participating in the project had lacked international cooperation experiences prior to their MSSI engagement and were somewhat disadvantaged by insufficient language and communication capabilities, the Japanese side made deliberate allowances to compensate for this shortfall in the construct of the project as well as the composition of the team members. Their collaborative partners and external observers may, of course, think otherwise and have critical comments to make on the manner and contents of the technical service provision by the Japanese side. The Japanese team members would be more than willing to listen to such comments in order, if possible, to make necessary corrections or adjustments for the remainder of the project period and in the possible future cooperation.

What is attempted below is to single out, from the point of view of the Japanese team, some salient features of the engagement by the Japanese side in the MSSI project which may be considered their 'critical' contributions – critical in the sense of 'going beyond the usual technical cooperation logic'. For such points may be mentioned in this respect.

(1) As mentioned earlier, the principal intervention by the Japanese technical cooperation team takes place in Japan through organization of training-cum-study missions for the South African partners in Japan. The general purpose of these missions, organized mostly by JICA as part of its training programs, is to expose the key individuals in the partner organizations to the Japanese educational experiences which may be of relevance to the MSSI project situation. Two groups of people have come to Japan on such arrangements – 16 senior officials of the Department who may be regarded as policy decision-makers and 36 MSSI project-related people, like CIs and including 4 UP experts. The existence of more than 50 such people on the South African side with a common mission experience generally facilitates the reflection of Japanese educational experience in the project. The critical Japanese contribution, however, has gone beyond that. Some of the senior officials came to Japan before the start of the project and helped shape the MSSI project. As mentioned earlier, District Education Managers

carried out their mission to Japan, in part, to specifically explore ways to support the MSSI project upon their return. Since these senior decision-making officials are usually busy and are never together for such an extended period of time like 4 weeks as for their missions, they undertook critical deliberations which they would never have done otherwise for the project. In other words, the missions by the senior officials to Japan over the years have helped sensitize the Department's decision-making structure to the MSSI project.

(2) In the case of the missions by the MSSI project-related people, the purpose was quite different. They were exposed specifically to three kinds of Japanese educational experiences, as follows: (i) experiences in school-based INSET activities, (ii) long and winding experiences in M & S curriculum development, and (iii) specific examples of M & S material development and teaching methods. The organization of the mission program was such that the people sent on mission not only observed how their Japanese counterparts engaged in similar learning but were also made for their own learning to engage in group work. This apparently had a positive impact on their thinking about their more than 5-week long mission; instead of treating it simply as another opportunity for individual upgrading, they worked as a team working for a common purpose. Such experience probably laid the ground for their collaborative work to formulate the plans for the District-level workshops and to implement them, as well as to take a joint initiative to produce guidebooks on they learn as a group. All this has been possible because of the study-cum-training mission in Japan.

(3) Another Japanese contribution to the MSSI project has been the insistence from the project formation stage that the project should be organized not as a usual bilateral technical cooperation project between the two government agencies, but as a tri-partite collaboration with a South African university participating as an equal partner. 'Partner' was defined as a collaborating entity which brings its own resources to the project. While such an arrangement departed from the usual pattern of JICA project formulation, it made sense given the combination of factors and situations surrounding the project possibility, such as the fact that South Africa had many excellent and well-endowed universities; that the project purpose (i.e., to build a school-based INSET system) was to be a long-term one for which technical support would have to come from domestic sources soon or later; that mutuality of learning through joint research was considered essential given the absence of knowledge and understanding about each other's educational situation and experiences; and that there was no university in the Mpumalanga Province. The choice of UP was based to a great extent on the fact that a teacher retraining project which the Center for Science Education of UP was carrying out in Eerstehoek District of the Mpumalanga Province provided a useful model for shaping the MSSI project. As mentioned earlier, the tri-partite cooperation was instrumental in generating gains, such as the research support for the project implementation provided by UP with JICA's financial assistance. Although there is still room for improvement, such as enhancement of UP's role for professional development of CIs and teachers, clearly UP's joining as an equal partner helped and can be expected to have even more significant impact as time goes on.

(4) Finally, the adoption of a multi-faceted approach by the Japanese side should be mentioned as another critical contribution. Although the main framework for the MSSI project is designed as 'another' JICA project, additional resources from other Japanese sources have been mobilized to enrich the project, including from other JICA sources. To support the professional capacity development of the CIs and HODs involved in the MSSI project, JICA started in 2001 to provide a scholarship to do graduate work in Japan. A new element to be incorporated this year is the placement of M & S teacher volunteers in the province through the Japan Overseas Cooperation Volunteers Program of JICA. One element which is mentioned in the basic cooperation agreement of the MSSI project has been the provision of science equipment to Teachers' Centers through the Foreign Ministry's

Grass-Roots Grants scheme. Hiroshima University and Naruto University of Education bring some resources at their disposal to the project, for example, for inviting UP researchers as Visiting Researchers and for engaging them in joint research projects. Numerous schools, boards of education and other organizations in Japan cooperate in the implementation of the study-cum-training missions by the South African partners. Since MSSI was the first major technical cooperation agreement between two 'stranger' countries, there was no set formula that could be utilized. What ever could be used needed to be used to maximize mutual exposure and understanding. A multi-faceted approach, pursued by the Japanese side, involving plural organizations and utilizing many different resources, was perhaps critical in getting the MSSI project started. That MSSI is still the only major technical cooperation project between South Africa and Japan bears witness to the difficulty that lies in initiating such endeavor between the two countries and to the correctness of this view.

Evaluation Mission Memo: No. 2

Note on meetings with the three Regional Directors

Nagao (June 26, 2002)

This year the Mpumalanga Province's educational administration is experiencing a drastic shift from a 10-District structure to a 3-Region structure. The three new Regions – Ekangala, Ehlanzeni and Eastvaal – comprise, respectively, 4 Highveld (former) Districts, 3 Lowveld Districts and 3 southern Districts. Nagao/Sawamura (accompanied by Kamiiisaka) met with the three Heads of these Regions to collect their views on the present status and possible future of MSSI – Mr. J. J. Mabena (Chief Education Specialist responsible for Teacher Centers and Circuit offices Coordination and 'Acting' Director of the Ekangala Region – on June 24), Dr. L. H. Mathunyane (Director of the Eastvaal Region – on June 25) and Mr. M. J. Lushaba (Director of the Ehlanzeni Region). All the three have been to Japan in JICA's Local Educational Administration Course and have a good understanding of the MSSI project.

The present note provides a summary of their views on three following sets of questions: (1) Impact of the Department's structural change on MSSI, (2) Assessment of the achievements of MSSI, and (3) Questions regarding Phase II proposal of the Department. Nagao's comments are also added as appropriate and appear in bold letters.

1. Impact of the Department's structural change on MSSI

The structural change involves merging of 10 Districts to 3 Regions. The new Regional Office will have a Director, a Deputy Director for Corporate Services (e.g., personnel, finance, etc.) and three Chief Education Specialists (CES) – one each for GET/FET, Teacher Centers and Circuit Offices Coordination, and Systems and Planning.[1] For the MSSI Project who occupies the Regional Director and CES posts will be very important. What is known so far is the following:

		CES		
Region	Director	GET/FET	TC and Circuit Coord.	Systems/Planning
<Ekangala>				
	L. Mello(?)	?	J. Mabena	M. Shaku
<Ehlanzeni>				
	L. Lushaba	?	C. Shube	?
<Eastvaal>				
	L. Mathunyane	Cisa	M. Malaza(?)	?

All these people are familiar with the MSSI Project, except Ms. Cisa, the CES for GET/FET for the Eastvaal Region. L. Mello has been appointed as Ekangala Region's Director, but is vacating the post soon to take up another post in the Province's ANC machinery (i.e., Secretary-General post). The other two Regional Directors, L. Lushaba and L. Mathunyane, were District Education Mangers. And so also were J. Mabena, M. Shaku and C. Shube. They have all been to Japan by JICA's Local Educational Administration Training Project directed by Hiroshima University/CICE. M. Malaza, who is expected to become the CES for TC and Circuit Coordination in the Eastvaal Region has been the person responsible for donor projects, including MSSI.

[1] The Ekangala Region has 4 Teacher Centers and 22 Circuits. The Eastvaal Region has 3 Teacher Centers and 19 Circuits (2 Circuit Manager positions are vacant). The Ehlanzeni Region has 3 Teacher Centers and 15 Circuits.

The merging of Districts into three Regions is in line with the political demarcation in the Province and is expected to reduce the cost of administration. According to Mr. Mabena, from the point of view of schools and program management, the abolishing of District-level attention would mean greater difficulty for service delivery. According to Mr. Lushaba, however, the problem has always been with the lack of professionalism on the part of the officials concerned and not with the structure as such. So the new emphasis on strategic planning and management might help. In any case he thinks that the most important thing is to gear the entire educational administration on how to support schools and schooling.

The newly appointed officials are either in the process of moving to their new offices or are settling into their new positions. According to Mr. Mabena and Dr. Mathunyane, this process is expected to last, at least, until the end of this year, and probably well into next year. **Although the three Directors all claim that the structural change would not affect the working of Teacher Centers, Circuit Offices and Curriculum Implementers (CIs), and as such should not affect MSSI, the very fact that the unsettled process is to linger on for some time to come could weaken the project implementation structure for MSSI. The support of the former District Education Managers for the work of CIs at the District- and school-levels, built through their participation in JICA Local Educational Administration Course, would have to be replaced by a new support structure (Please see the Section on 'clustering approach' under Section 3 below).**

There is some ambiguity in the new Regional Structure concerning the line of authority for CIs. Although they come under the curricular directions of CES for GET/FET, they will physically be located in the Teacher Centers and need to interact for daily work with Teacher Center heads and Circuit Managers, who come under the line of authority of another CES. In Phase II, such ambiguity should be eliminated by establishing clear-cut lines of authority and support for CIs.

2. Assessment of the achievements of MSSI

The three Regional Directors are in agreement concerning the impact MSSI Project is having on the CIs. According to Mr. Mabena, they have been transformed by their MSSI experience and have become generally more confident and more interested in their work, as reflected in their increasingly positive attitude towards school support activities and participation in professional associations, as well as pursuit of advanced degrees. M & S CIs are much more motivated and more active than other CIs. Mr. Mabena thinks that the CIs' study mission to Japan had a significant impact on their attitude and work behavior; their observation of M & S education practice in Japan seem to have made them realize the importance of this education and the value of the collaborative work among the teachers as well as CIs themselves. **This point is corroborated by the compilation of two MSSI Guidebooks.**

The impact of MSSI is also felt at the level of schools, according to Lushaba. At a science teachers meeting he attended recently, he noticed that certain teachers were takaing a very active stand for teacher development program and later learned that they were teachers from MSSI schools. This he thought reflected an impact on teachers' professional consciousness. Mabena mentioned that the number of learners taking M & S subjects had increased during the last few years and that this must have been an impact of the MSSI's school-based approach.

Mathunyane is not exactly certain about the impact of MSSI because his association with the project is still less than a year. But he hears enthusiastic comments about MSSI from people around him. He thinks that if the emphasis on school-based improvement is maintained, the project should generate significant impact in due time.

The Regional Directors' views were somewhat divided as regards the Head Office's part

in promoting MSSI. Mabena thinks that the recognition of the importance of M & S at the Province level in Mpumalanga is relatively weak compared with the national importance given, for example, by the '102 Science School' Program. Mathunyane thinks that the Curriculum Devision's staff are making visits to Districts and schools. Mabena and Lushaba feel that the Head office, in giving out directives on policies and projects, has failed to explain clearly their relative priorities. According to them, this was caused by poor planning, which resulted in multiplication of projects and tasks to be handled by the District-level officials, especially CIs. Delay in staffing of vacant CI posts further aggravated the situation. However, they feel that, since the reorganization, there is a new emphasis placed on 'strategic planning' and this may lead to a turn-around in this regard.

Finally, regarding the role of UP, the three Regional Directors knew that UP was a partner, but were not very familiar with the exact role they were expected to play. They only saw UP personnel at CI Meetings. They do feel strongly that UP could and should play a major role in the professional development of M & S CIs and teachers. At any rate **efforts should be made to make known both their actual and potential contributions**.

3. Questions regarding Phase II proposal of the Department

The three Regional Directors strongly support the extension of MSSI to cover Grades 10-12, as well as Grades 8-9. Phase I and Phase II should be considered together to constitute efforts to create a M & S education stream at the secondary level.

As to the extension to cover 'technology' in addition to M & S, they were not quite clear. Mabena thought it meant perhaps that some opportunities for vocational study should be built into M & S studies, although he was not aware of any effort by the head Office to explore such an area. Lushaba thought the addition of 'technology' was simply to remind that M & S education should not be 'non-practical' but relate to real life situations. Mathunyane realizes, like the other two, that the Department at present does not possess much capacity to teach technology as an independent discipline, and argues for inclusion of technology as part of M & S education.

The three are in agreement that the secondary education should take greater account of the jobless situation for the school leavers. They also endorse the concept of 'maarket-related skillsBoth Mathunyane and Lushaba feel that the secondary education should nurture not only those who become employment seekers but also employment providers upon graduation. Mathunyane thinks that for this the Department should create more technical high schools.[2] Mabena feels that the upper secondary M & S education should be more professionally minded. One way to do this may be to encourage IT education. A possible scheme may be to make all Grade 12 school leavers to have, as part of their M & S education, a one-week computer literacy training during school vacations. Such a program should be developed in collaboration with the enterprises interested.

The three Regional Directors are in agreement with the shift of MSSI Program approach from one of compulsory training for M & S HODs in all schools, which is based on the principle of equity, to one of selective training for schools that initiate and take part in 'voluntary' cluster activities. Once a year a sharing workshop may be held for all M & S HODs to learn about the results of the cluster activities.

[2] Presently there are three agricultural high schools and three technical high schools. The latter serves primarily white students.

Evaluation Mission Memo: No. 3

Meetings in the Head Office

June 29, 2002
M. Nagao

The structural change of the Department administration is on. In terms of organizational structure and manning, changes in the Head Office are not as drastic as in the regions (Please see Memo No. 2). In the Curriculum Division, which continues to be headed by the same Chief Director (Mashaba), GET (General Education and Training) and FET(Further Education and Training) are now separated, with Joe Molai promoted to GET Director and J. Mkhwanazi remaining as Chief Education Specialist (No. 2) for FET (Director is Van Zyl). One change which may favor MSSI is the appointment of D. D. Mashego, who was the District Education Manager of the Witbank District and a strong supporter of MSSI, to Chief Director of Systems and Planning).

What follows is a note on the meetings held with several officials in the Head Office, with some additional comments by Nagao in bold letters.

Mr. S.S. Motshana (Director, Strategic Planning and Co-ordination)

Motshana, who used to be Director of Districts and who took part in JICA Local Educational Administration Training Course in Japan last year, has been made Director of Strategic Planning and Co-ordination under the supervision of D.D. Mashgo. He is now responsible for promotion of systematic planning (of 'management by objectives' type) in the Head Office and the three Regional Offices and for coordinating projects jointly implemented with external organizations. He will be the person with whom JICA and other foreign donors, as well as domestic donors (including the Central Government for special projects), must deal.[1] Motshana was very instrumental in establishing the key features of the MSSI scheme during the initial planning process, including, for example, the four-four-two formula for covering of the Districts in the project.

According to Motshana, the structural change of the Department administration is generally a good one, and they tend to favor MSSI. There are three reasons for the latter: (i) the changes shift the decision-making authority closer to schools, (ii) they help rationalize the relationship between the Head Office and the regions through the instrumentality of strategic planning, and (iii) curriculum implementation structure will be strengthened through the transformation of Teacher Centers (whose locations are to be maintained) into Professional Development Centers and creation of additional CI posts for FET. Strategic planning is to be implemented by the adoption of performance management for manager-class officials based on annually contracted 'Performance Agreements'. The performance of each manager will be assessed on a quarterly basis in terms of performance targets achievement and budget plan implementation (Development Appraisal System).[2]

Motshana thinks that the MSSI project is well recognized in the Department and the Provicne. The way the project is structured focusing on school-based INSET activities makes it certain that the project will have impact. Although the Province's matric results declined over-all, M & S results improved and the Province showed the biggest improvement in the country.

Regarding the role of UP in the MSSI project, Motshana is not impressed by UP's

[1] He will take over the work of Mr. M. Malaza in the Special Education Project.
[2] For educators, there is an 'Educator Development Appraisal' handled by the Human Resources Development Division.

intervention for the professional development of CIs and HODs. According to him, there is also a communication problem. The research-minded UP tends to stress problems and challenges so much that they tend to give 'negative' or 'discouraging' impression.

As to the possible directions for Phase II, Motshana endorses a more selective approach focused on cluster activities and extension of grade coverage to FET phase. For him addition of 'technology' could be conceived as the use of computers as a learning instrument. He thinks that the enrollment ratio for FET is bound to go up, so computer literacy education may be considered for that phase rather than the senior phase.

Ms. D.D. Mashego (Chief Director, Systems and Planning)

In a short meeting, Mashego stressed her continued interest in MSSI and promised cooperation with the project in her new post. However, since she has just assumed the office and is still in the process of familiarizing herself with all the new responsibilities, she did not elaborate on any points.

Mr. J. Molai (Director, GET)

Molai has been the Acting Director of the Curriculum Management Department and has served as the principal link to the Department's top management for the MSSI Project.[3] He was one of the people sent to Japan to attend JICA's math and science training course before the MSSI project came into being. His role was particularly critical in the initial stage of the project when the project had to start from scratch with the recruitment of CIs -- and this at a time when there were unsettling changes in the top management.

According to Molai, the MSSI made a great stride in having the concept of school-based INSET accepted by the schools and in creating a motivated and confident corps of CIs. He feels, however, that given the Department's policy to create GET CIs and FET CIs separately, there will be even a stronger need for further professional development of CIs and CI candidates. In this connection, he was not entirely satisfied with the accreditation program conducted by UP last year. He was particularly disturbed that there was a significant number of dropouts from the program but that UP did not seem to care, which caused discontinuity of the program.

Regarding Phase II of the MSSI project, Molai agrees that the grade coverage is extended to FET phase. However, he feels that it should not lead to an excessive concern with the senior certificate examination; even without that, there is already too much political preoccupation with the result of that examination. M % S education should be for building a fundamental understanding, for which a link between GET and FETis essential.

Molai was not clear about the addition of 'technology' for wider subject coverage, nor about the concept of 'market-related' skills.

[3] It should be mentioned that the Chair of the Steering Committee of the MSSI Project was Jan Mkhwanazi, who was Deputy to Molai.

Evaluation Mission Memo: No. 4

Present Status of MSSI School-based INSET activities

June 29, 2002
M. Nagao

One important aim of the MSSI project is to develop a Province-wide system of school-based INSET activities for secondary M & S teachers. In order to encourage and support such activities a cascade system of training has been instituted with CIs playing a pivotal role. A concise explanation of how such an activity may be carried out at the school-level is given in MSSI Guidebook No. 2, entitled "Peer Teacher Learning – How teachers learn from teachers", compiled by a group of CIs.

The present note aims at capturing the present status of these activities after the project has been implemented for two and a half years. Two different types of information are presented for this purpose: one is the school-based INSET monitoring data form the MSSI schools, and the other a subjective assessment by the MSSI CIs of the school-based M & S INSET activities in their 'Districts'. The concluding section of the note briefly discusses possible inferences and implications from the data presented.

1. MSSI School-based INSET monitoring data

Format used and data generated

The MSSI project has instituted a monitoring system to keep track of the school-based INSET activities that takes place in each MSSI-participating school as part of the project, using a 'Matachi' format. The Matachi format, named after Mr. Atsushi Matachi, the JICA Project Coordinator for the MSSI project from April 1999 to April 2001 who created it, consists of the following four formats:

Form 1 – a one-page format used by an HOD to record each school-based INSET activity;
Form 2 – a 4-page format used by an HOD for quarterly reporting;
Form 3 – a 2-page format used by a CI to record each school visit (with an additional page to report on classroom support-lesson observation); and
Form 4 – a 6-page format used by a CI for quarterly reporting.

The HOD of each MSSI-participating school is to prepare a quarterly report, using Form 1 and 2, and send it to the CIs in the 'District'. The CIs are to compile the data from all the schools in their Districts, add the results of their school visits, using Form 3, prepare a quarterly report, using Form 4, and send it to the MSSI Coordinator Team. The Coordinator Team compiles a Province-level report on a bi-annual basis for submission to the MSSI Steering Committee.

This system started working in the second year of the Project. After a year and a half of its functioning, it is yet to be firmly established. Many schools fail to report and some CIs are slow to compile data. Imperfect though may be, the system has started to generate information that helps one capture how the project is proceeding at the school level.

Table 1 presents District-level data for two periods in 2001 (i.e., March-May and June-September) and one period in 2002 (i.e., March-May). The data provided are as follows:

No. of Schools: Number of schools participating in MSSI in the District
No. M/S INSET: Total number of M & S school-based INSET activities/sessions held in the MSSI-participating schools in the District
M: Number of activities/sessions held on mathematics
S: Number of activities/sessions held on science

M&S: Number of M & S combined activities/session
Aver. Per school: Average number of activities/sessions held per school
Sch. with No INSET: Number of schools with no school-based INSET activity during the period
Sch. with INSET: Number of schools with some school-based INSET activities during the period
More than 1/month: Number of schools which held one or more school-based INSET activities/sessions per month
No. class applic.: Number of classroom applications realized on the basis of MSSI school-based INSET
All sch. INSET: Number of all school INSET sessions held in relation to MSSI (e.g., reporting sessions following MSSI District-level workshops)
No. CI visits: Number of visits made to MSSI schools by CIs
Sch. in clusters: Total number of schools involved in MSSI cluster activities
Leading schools: Schools with most active MSSI school-based INSET in terms of the number of activities/sessions held (presented in the parentheses)

Before examining the table for salient findings, it should be cautioned that what is reported by each school as a school-based INSET activity/session may not be uniform and of the same quality. The reports from the schools are not necessarily accompanied by Form 1, which should inform about the contents of each activity undertaken, so there is at present no way of verifying the quality or meaning of what is reported. Some schools may give false reports. The data, therefore, should be taken with a grain of salt. But this is inevitable for any monitoring of a system-building effort. Getting a monitoring system functioning is the first order of priority. Checking of the quality or contents of what is reported can follow the acceptance of the habit of regular monitoring.

Main findings

On the basis of Table 1,[1] a broad picture of the present status, as well as some basic trends, of MSSI school-based INSET activities may be identified, including the developments in different Districts. For ease of reference they are itemized as follows:

(1) The MSSI project has by now reached all the Districts, and out of the 232 schools covered in the reports for the latest period of March-May 2002, 130 schools (56%) have reported having carried out some M & S INSET activities in their schools. The total number of INSET carried out amounted to 370 activities/sessions, which works out to an average frequency per school of 0.8 times for the three-month period. If only the schools reporting INSET activities are counted, the average frequency is 2.8 times per school, which would amount to nearly 'monthly' INSET activity undertaken.
(2) If one compares the March-May and June-September periods in 2001 with the latest period, one notices a decline in the proportion of schools with school-based INSET activities. In 2001, the proportion of schools with MSSI INSET were 65% in the March-May period and 73% in the June-September period, as compared to 56% for the March-May 2002 period cited above. This is probably explained by the spreading of the project's intervention effort against increased number of MSSI schools. The decline in the frequency of the school-based INSET was less noticeable, although the average for the INSET practicing schools has gone down from more than 3 times to 2.6 times.

(3) The intensity of MSSI school-based INSET practice varied from district to district. The Districts which are ahead in adopting the practice are KwaMhlanga, Witbank and Malelane. These districts have high ratio of schools implementing the school-based INSET and high frequency of the activities. More than one third of their MSSI

[1] This table is not complete, as data for the most recent period are yet to be added for KwaMhalanga (46 schools), Witbank (55 schools) and Hazyview (20 schools).

participating schools are carrying out such activities at least once a month. On the other end of the spectrum are some districts, such as Groblersdal and Eerstehoek, that are encountering some difficulties in spreading the practice. In these districts, the number of schools implementing the school-based INSET has come down despite the increase in the number of schools participating in the project.
In between these two groups of districts, there are Moretele, Hazyview and Nelspruit, where the practice appears to be established in several schools but not followed by others. In Ermelo and Standerton Districts, the MSSI project has started since March of this year, so it is still too early to say definitive things. Yet, it may be noted that, in the case of Standerton, already 9 out of the 10 participating schools have carried out some INSET and 8 of those with one or more INSET activities per month.

(4) The district that may serve as a 'model' for the other districts is Malelane. There all 27 schools participating in MSSI are conducting some school-based INSET, and combined they carried out more than 100 such activities during the latest reporting period of February-May, which comes to an average of around 4 times per school. 17 out of 27 participating schools are conducting school-based INSET once or more per month.

(5) The subject content of the school-based INSET activities varied from district to district (and probably from school to school). In KwaMhlanga, Malelane and Witbank Districts, there is observed a marked trend towards organizing combined M & S INSET activities.

(6) Classroom application of the results of school-based INSET activities/sessions varied from district to district, and also from period to period. In some districts, such as KwaMhalanga, Witbank, Hazyview, and Nelspruit, the number of classroom applications seem to reflect the frequentness of CI visits to schools, although in other districts frequent visits by CIs were not accompanied by large number of classroom applications. One needs to verify Form 3 to be filled out by CIs to ascertain the co-relation.

(7) In addition to M& S school-based INSET, the MSSI project has induced holding of all-school INSET on M & S. These activities take place typically when back-to-school reporting is done to all the teachers in a school by HODs upon their return from MSSI workshops. There are, however, cases of more substantive all school INSET with M & S contents which are organized by some principals who consider the MSSI approach to be meaningful not only to M & S teachers but also to other teachers.

(8) Cluster activities are apparently picking up. The number of schools belonging to a cluster is 53, which is 23 % of the reporting schools. In Witbank and Malelane Districts, there are more than 15 schools in clusters.

(9) Finally, in each district, there are some schools which are adopting the M & S school-based INSET practice ahead of others. These schools frequently organizes school-based INSET activities/sessions. Some of these schools also serve as leading schools for cluster meetings which are organized with some of their neighboring schools.

2. Subjective assessment by MSSI CIs

Data

In the project implementing mechanism of the MSSI project, CIs play a pivotal role as the principal and direct supporter of school-based INSET activities. They stand, or should stand, closest to the schools. Although their actual visits to the MSSI schools for school-based INSET support may not be frequent, they try to keep contact with the M & S HODs through various means.

Table 2 contains an assessment by CIs of M & S school-based INSET in their districts.

In order to construct this table, each District's CIs were asked to indicate the number of schools belonging to the following three categories: (1) Category I schools which conduct regular INSET, (2) Category II schools which conduct occasional INSET, and (3) Drop-out schools. In order to give the first two categories some descriptive (or operational) meaning, additional qualification was given in terms of HOD leadership, teacher participation and school management support (Please see the note in the table). These qualifications take into account the comments made by the CIs at different workshops in reporting on the school-based INSET activities in their districts.

Even with these definitions, the assessment made by CIs can not escape some arbitrary element because of its subjective nature. This shows in the way their judgements are given. For example, In KwaMhlanga District, there is none mentioned for Category II, whereas in Moretele District, which did not fare well according to the monitoring data, 25 schools are included. In Nelspruit District, there is no school to be included in either Category I or II. The assessment of the CIs in Ermelo and Standerton Districts, which have just come on stream with the MSSI project, may not be regarded on the same ground as that of CIs in the Highveld districts with more than 2 years of track record in the project. For all these considerations, the data in the table need to be looked at with caution.

Findings

According to the judgement of the CIs, 48 (or 15%) of the 313 schools now participating in the MSSI project, would fall under Category I. In other words, one out of 6 or 7 participating schools are considered to have adopted the practice of regular M & S INSET in their schools. In Witbank and Malelane Districts, there are more than 10 schools in this category, followed by KwaMhalanga and Hazyview Districts with 6 schools and 5 schools respectively.

Category II schools are more numerous and number 87. When this category is combined with Category I, they number 135 schools or 43% of the total. When compared with the 'proportion of MSSI participating schools with some school-based INSET' of 56% obtained from Table 1, this may be considered a 'plausible' figure. In order to be on the safe side, if this combined proportion is discounted for possible bias of the subjective judgement by, for example, 7~8%, this would still leave 35 % or one of the three schools as holding either 'regular' or ' occasional' sessions.

The number of drop-out cases, according to the CIs, is 4 schools in all. This, however, may be an understatement. There are many schools which are not submitting monitoring reports regularly and even some which are not taking part in the MSSI workshop activities for various reasons. They may be effectively opting out of the project.

3. Some inferences and implications

Based on the two sets of the data presented above, some inferences may be made and implications drawn, as follows:

(1) MSSI school-based INSET activities appear to have taken firm roots in around 45~50 schools, or around 15 % of the total participating schools of 313 schools. These schools conduct one or more INSET activities per month. These are schools with active HOD leadership backed by strong school management support.

(2) There are probably additional 80~90 schools where the idea of school-based INSET is well-understood by the HODs, who manages to organize such activities occasionally. They may not receive strong support from their school management and/or support from fellow M & S teachers, which prevent these schools from adopting the regular INSET practice.

(3) As the number of MSSI-participating schools increases in each region, the intensity of MSSI school-based INSET activities seems to have declined in most of the Districts. This is to be expected given the limited amount of time at the disposal of CIs. For those schools which joined the MSSI project in Highveld and Lowfeld districts this year, another handicap has been the new restriction on attendance of workshops by teachers that it should not be allowed during school class hours.[2]

(4) The change in the organizational structure of the Mpumalanga Department of Education probably, involving abolition of District Manager posts and moving of many officials, which is still on, has caused many CIs to lose the needed support for their work with schools. Many District Managers not only endorsed the MSSI project but also acted to render assistance to the CIs concerned. Until the new Regional Offices are firmly established with all the posts filled and lines of authorities clarified, the CIs would miss both the support and managerial direction.

(5) Cluster activities are growing on the basis of cooperation among schools for organizing school-based INSET. This seems to make sense in view of the emergence of the schools with established school-based INSET practice. More detailed analysis needs to be done on these schools and their potentials for serving as cluster leaders. How the cluster activities should be organized in relation to school-based activities is a topic that also requires investigation.

(6) While in the present phase of the MSSI project, the principal concern should perhaps been achieving of regular practice of holding school-based INSET activities/sessions, in the future more attention would have to be paid to the quality of these activities. In order to bring about such a change, the monitoring system should become more fully operative, with the sharing of forms describing each school-based INSET activity/session (Form 1) and each visit to school by CIs (Form 3).

(7) Finally, the data generated through the monitoring system should be analyzed in reference to the 12 case studies being conducted by the UP research on MSSI project implementation and to the individual school data in EMIS.

[2] This new rule was wavered for Ermelo and Standerton Districts, which came into the project this year, in organizing their first district-level workshop. However, from the third session onward, they will need to abide by the rule.

Table 1 MSSI School-based INSET Monitoring Data: 2001/2002

	No. of Schools	No. M/S INSET	M	S	M&S	Aver. per sch.	Sch. with No INSET	Sch. With INSET	More than 1/month	No. class applic.	All Sch. INSET	No. CI visits	Sch. in clusters	Leading schools
Grobiersdal														
Mar-May 01	30	23	7	8	8	0.8	20	10	5	0	22	19	4	Mohlamme(4)/Thejane+3(3)
Jun-Sep 01	30	33	9	8	16	1.1	13	17	3	2	7	2		Nala,Mohlamme,Ndedema(4)
Mar-May 02	60	32	10	18	4	0.5	47	13	4	0	32	36	2	Mohlamme,Ndedema,Fundu'ke(4)
KwaMhlanga														
Mar-May 01	23	82	22	17	43	3.4	5	18	14	28	0	16		Comprehensive(12)/N.Mabhko(9)
Jun-Sep 01	23	53	17	13	23	2.3	4	19	7	3	0	3		Senzangaakhona(6)
Moretele														
Mar-May 01	20	39	5	11	23	2.0	4	16	8	0	9	2	2	Sithnjisiwe(6)/Moloto(5)
Jun-Sep 01	20	38	18	18	2	1.9	6	14	5	0	7	0		Lekholane(7)/Refilwe,Dikotelo(5)
Feb-Apr 02	37	35	16	13	6	0.9	20	17		0	16	1		Ditholo(9)/Dikotelo(6)
Witbank														
Mar-May 01	20	46	17	14	15	2.3	6	14	9	17	0	10		Eastdene(7)/Mphanama+1 (5)
Jun-Sep 01	20	53	21	19	13	2.7	4	16	7	15	0	7	15	Bongingsimbi(6)/Eastdene+1(5)
Eerstehoek														
Mar-May 01	10	29	6	8	15	2.9	1	9	6	17	14	0		TD.Nkosi(5)/Mbalenhle+3(4)
Jun-Sep 01	10	35	14	15	6	3.5	0	10	5	15	35	1		Ligugu(6)/TD.Nkosi+3(4)
Mar-May 02	25	5	0	2	3	0.2	21	6	0	2	0	7	3	
Hazyview														
Mar-May 01	10	24	9	8	7	2.4	3	7	6	8	0	14		Lungisani(5)/Khutsalani+1(4)
Jun-Sep 01	10	27	13	14	0	2.7	6	4	3	37	0	32		Sybrand(10)/Kgahlanong(8)

MSSI School-based INSET Monitoring Data: 2001/2002

	No. of Schools	No. M/S INSET	M	S	M&S	Aver. per sch.	Sch. with No INSET	Sch. With INSET	More than 1/month	No. class applic.	All Sch. INSET	No. CI visits	Sch. in clusters	Leading schools
Malelane														
Mar-May 01	12	35	10	4	21	2.9	4	8	7	10	8	2	2	Njeyeza(7)/Sidlamafa(6)
Jun-Sep 01	12	48	13	13	22	4.0	0	12	8	1	3	2	2	Sophungane(7)/Sidlamafa+1(6)
Feb-May 02	27	105	0	0	105	3.9	0	27	17	8	0	9	18	DD.Mabuza+3 cluster(6)
Nelspruit														
Mar-May 01	10	18	3	3	12	1.8	4	6	4	9	5	0		Sitintile, Tikhontele, Kamhola(4)
Jun-Sep 01	10	16	3	4	9	1.6	4	6	1	15	4	26		Tikhontele(4)/Sitfokotile+1(3)
Mar-May 02	23	32	3	4	25	1.4	2	21	2	1	0	0		Masitake(4)/Tikontele(3)
Ermelo														
Mar-May 02	10	24	14	8	2	2.4	5	5	4	16	6	0		Cebisa,Nganana,Nalithuba(6)
Standerton														
Mar-May 02	10	31	10	10	11	3.1	1	9	8	0	0	37		S.Klip, Khulakhile, Khunjuliwe(5)
Total														
Mar-May 01	135	296	79	73	144	1.1	47	88	59	89	58	63	8	
Jun-Sep 01	135	303	108	104	91	0.7	37	98	39	88	56	73	17	
Mar-May 02	232	370	95	93	182	0.8	104	130	49	57	54	104	53	

Notes: See text for explanation of different terms.
Moretele data used for calculation of 'Mar-May 02 total' columns are for February-April 2002.