

パキスタン・イスラム共和国
ギルギット・バルティスタン地域
高付加価値果樹産品振興プロジェクト
中間レビュー調査報告書

平成 27 年 7 月
(2015年)

独立行政法人国際協力機構
パキスタン事務所

パキ事
JR
15-006

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略語及び略称

ADP	Annual Development Plan
AKRSP	Aga Khan Rural Support Programme Pakistan
BRSO	Baltit Rural Support Organization
C/P	Counterpart
CEO	Chief Executive Officer
DC	Down County
DCM	Down County Market
DoA	Department of Agriculture, the Government of Gilgit-Baltistan
GB	Gilgit - Baltistan
GDP	Gross Domestic Product
GOLD	Golden Jubilee Organization for Local Development
HH	Household
HRSO	Hyderabad Rural Support Organization
JCC	Joint Coordination Committee
JICA	Japan Interational Cooperation Agency
LSO	Local Support Organization
MM	Man/Month
MML	Mountain Micrograms Liquid
P&D	Planning and Development Department, the Government of Gilgit-Baltistan
PDM	Project Design Matrix
PKR	Pakistani Rupee
PMM	Project Management Meeting
PMU	Project Management Unit
PO	Plan of Operation
USD	US Dollar
VO	Village Organization
WO	Women's Organization

評価調査結果要約表（和文）

1. 案件の概要	
国名：パキスタン・イスラム共和国	案件名：ギルギット・バルティスタン地域高付加価値果樹産品振興プロジェクト中間レビュー調査
分野：農業・農村開発	援助形態：技術協力
所轄部署：パキスタン事務所	協力金額（評価時点）：約 3.2 億円
協力期間	(R/D)：2012年8月22日～2016年8月21日（4年間）
	先方関係機関：ギルギット・バルティスタン（GB）政府計画開発局（P&D）、農業局（DoA）
	日本側協力機関：なし
	他の関連協力：なし
<p>1-1 協力の背景と概要</p> <p>パキスタン・イスラム共和国（以下、「パキスタン」と記す）の北部の山岳地帯に位置するギルギット・バルティスタン（Gilgit - Baltistan : GB）地域の1人当たり国内総生産（Gross Domestic Product : GDP）は約 600 ドルと推定されており、人口の 29%は貧困であるとされている。</p> <p>JICA は 2009 年 12 月から 2010 年 5 月にかけて、パキスタンにおける園芸農業に関する基礎情報収集・確認調査（以下、「基礎調査」）を実施した。その結果、GB 地域の園芸農業の全体像が明らかになり、アプリコットとリンゴとチェリーに販売ポテンシャルがあると提案された。その後 2011 年 6 月から 7 月にかけて詳細計画策定調査を実施した。</p> <p>JICA は詳細計画策定調査の結果を受け、付加価値の高いアプリコット加工品とリンゴを農家が安定的かつ持続的に生産できるようにするために、農業局（Department of Agriculture, the Government of Gilgit-Baltistan : DoA）による農家への栽培・加工技術の普及や加工・梱包に必要な設備・資材の導入、また、市場が求める品質の果樹産品を農家が生産し、農業局のマーケティング支援を受けて農家が果樹産品を民間組織に販売する体制及び民間組織が新たな販路を開拓できる体制を構築するための技術協力プロジェクトの枠組みについてパキスタン政府と合意した。</p> <p>中間レビュー調査は、2016 年 8 月のプロジェクト終了を控え、協力中間時点におけるプロジェクト活動の実績、成果を評価、確認するとともに、協力期間後半のプロジェクト活動の方向性に対する提言及び今後の類似事業の実施にあたっての教訓を導くことを目的とする。</p>	
<p>1-2 協力内容</p> <p>(1) 上位目標</p> <p>GB 地域において、アプリコット加工品とリンゴの生産とマーケティング体制が改善される。</p> <p>(2) プロジェクト目標</p> <p>パイロット地域において、高品質なアプリコット加工品とリンゴの生産量と販売量が増加する。</p>	

(3) アウトプット

アウトプット 1：アプリコット加工品の生産とマーケティング体制が改善される。
アウトプット 2：生鮮リンゴの生産とマーケティング体制が改善される。

(4) 投入（評価時点）

日本側：総投入額 1,912 万 2,939 円

専門家 13 名 機材供与 242 万 2,939 円
ローカルコスト負担 1,670 万円 研修員受入れ 85 名

パキスタン側：総投入額 984 万 6,814 円

カウンターパート（C/P） 18 名 事務スペース提供（ギルギット、カリマバード）
ローカルコスト負担 984 万 6,814 円

2. 評価調査団の概要

調査者	総括	河崎 充良	JICA パキスタン事務所 所長
	農業経済	平島 成望	JICA 国際協力専門員
	農産物加工	渡部 直人	株式会社アグリ・エナジーインターナショナル
	協力企画 I	濱野 聡	JICA パキスタン事務所 所員
	協力企画 II	Mr. Amir Bukhari	Senior Programme Officer, JICA Pakistan Office
	評価分析	小笠原 暁	株式会社 VSOC 事業部 コンサルタント
	Leader	Mr. Muhammad Nazir Khan	Deputy Chief, Planning and Development Dept. the Government of Gilgit-Baltistan (GB)
	Deputy Leader	Mr. Ghulam Mustafa	Deputy Director, DoA, the Government of GB
Focal Person	Mr. Javed Akhtar	Deputy Director, DoA, the Government of GB	

調査期間 2015 年 6 月 10 日～7 月 2 日

評価種類：中間レビュー

3. 評価結果の概要

3-1 実績の確認

(1) プロジェクト目標の達成見込みについて

- (指標 1) パイロット地域において、グレード A にグレードづけされたドライアプリコットの販売量が 30%増加する。
ベースライン調査（第 1 年次）及び中間調査（第 3 年次）で得られたデータを比較のため示すと以下ようになる。

	第 1 年次	第 3 年次
パイロット地域において、グレード A にグレードづけされたドライアプリコットの販売量	5,947 kg	5,901 kg

- (指標 2) パイロット地域におけるアプリコットカーネル、カーネル製品、アプリコットオイルの販売量が 30%増加する。
ベースライン調査（第 1 年次）及び中間調査（第 3 年次）で得られたデータを比較のため示すと以下ようになる。

	第1年次	第3年次
アプリコットカーネルの販売量	4,483 kg	4,166 kg
アプリコットオイルの販売量	0 l	25 l

- (指標 3) 卸売市場で販売される新鮮リンゴについて、平均して S3 にグレードづけされた生鮮リンゴの割合が 80%以上になる。
ベースライン調査（第1年次）及び中間調査（第3年次）で得られたデータを比較のため示すと以下ようになる。

	第1年次	第3年次
S3 にグレードづけされた生鮮リンゴの割合 (%)	0 % (S1 にグレードづけ)	76%

- 上記のプロジェクト目標の三つの指標の達成状況から、明確に達成された根拠となるデータがないため本プロジェクト終了時点のプロジェクト目標の達成について判断はできない。もしアプリコットカーネル、アプリコット加工品、アプリコットオイル、カーネル加工品の販売量が増加したなら、本プロジェクト終了時にプロジェクト目標は達成できであろうと判断できる。

(2) アウトプット1の達成度について

- (指標 1-1) 栽培、加工、マーケティングのマニュアルが作成される。
本プロジェクトは、プロジェクト活動を基に栽培、加工、マーケティングのマニュアルを作成している。中間レビュー時点で、剪定、摘果、肥料、加工（乾燥・搾油）、マーケティング等のトピック及び内容を含めている。そのうえ、本プロジェクトは、リンゴとアプリコット栽培、加工に関する本を編集することを計画中である。
- (指標 1-2) プロジェクトで指導した栽培技術を農家が適用する（台木管理 50%、接木 50%、剪定 50%、虫害防除 50%、有機肥料 50%、加工 50%）。
2015年4月に実施した中間調査によると、結果は以下のとおり。
台木管理：99%（若木を所有している農家のなかで若木に水やりを使用している農家）
接木：16%（日本人専門家の指導により割り接ぎ、切り接ぎを実践している農家）
剪定：45%（剪定にのこぎりを使っている農家）
虫害防除：2%〔BCL（忌避剤）使用の農家〕
有機肥料：1%〔ボカシやMML（Mountain Micrograms Liquid）を使っている農家〕
収穫：25%（収穫にトランポリンを使用している農家）
加工1：49%（乾燥前に生鮮アプリコットを洗っている農家）
加工2：79%（生鮮アプリコットを切る前に手を洗っている農家）
加工3：7%（生鮮アプリコットを切る際にナイフを使用している農家）
加工4：17%（熟度や傷み具合によりグレーディングを行っている農家）
- (指標 1-3) 農家の持続的な収入のためにアプリコット製品に係るマーケティングプランが作成される。
国内市場向け・国際市場向けのアプリコット加工品のマーケティング戦略及びブランド戦略案が作成された。国内市場向けには、①市場シェアを拡大し、②高品質の加工品・独自

の味を主力商品として提案することとしている。

- 一方で、国際マーケティング戦略が提案され、①自然、オーガニック、健康的な食生活に関心があるミドルクラスあるいは高収入グループの若い女性をターゲットにすること、②アプリコット加工品を上流層向けの百貨店における主力商品と位置づけること、が提案された。
- アウトプット1の記述及び指標の達成度合いから、アウトプット1は中間レビュー時点である程度は達成できているといえる。

(3) アウトプット2の達成度について

- (指標 2-1) 栽培、加工、マーケティングのマニュアルが作成される。
本プロジェクトは、プロジェクト活動を基に栽培、加工、マーケティングのマニュアルを作成している。中間レビュー時点で、剪定、摘果、接木、肥料、グレーディング、マーケティング等のトピック及び内容を含めている。そのうえ、本プロジェクトは、リンゴとアプリコット栽培、加工に関する本を編集することを計画中である。
- (指標 2-2) プロジェクトで指導した栽培技術を農家が適用する（摘芽及び摘果 50%、接木 50%、苗木管理 50%、虫害防除 50%、有機肥料 50%）。
2015年4月に実施した中間調査によると結果は以下のとおり。
摘芽及び摘果：23%
接木：22%（日本人専門家の指導により割り接ぎ、切り接ぎを実践している農家）
苗木生産：99%（若木を所有している農家のなかで若木に水やりを行っている農家）
剪定：68%（剪定にのこぎりを使用している農家）
虫害防除：6%〔BCL（忌避剤）を使用している農家〕
有機肥料：6%（ボカシやMMLを使用している農家）
- (指標 2-3) パイロット地域において、リンゴの生産量及び販売量を記録する農家が20%増加する。
2015年4月に実施した中間調査によると、生鮮リンゴの生産及び販売金額を記録していた農家数は、第1年次（2012年）、第3年次（2015年）でそれぞれ0世帯であった。
- (指標 2-4) 収穫、グレーディング、包装を農家自身で行う割合が10%増加する。ベースライン調査（第1年次）及び中間調査（第3年次）で得られたデータを比較のため示すと以下のようになる。

	第1年次	第3年次
収 穫	19% (49 世帯)	46% (122 世帯)
グレーディング及び包装	9% (21 世帯)	43% (115 世帯)

- (指標 2-5) 農家の持続的な収入のために新鮮リンゴに係るマーケティングプランが作成される。
以下のように生鮮リンゴの国内市場（Down County Market : DCM）に向けたマーケティング戦略が提案された。
 - より改善された栽培技術/技能及び管理による高品質の生鮮リンゴの改善
 - 収穫、グレーディング、包装の改善

- 主なメインターゲットは、国内市場（DCM）（主に卸売市場とする）
- これらに加えて、GB 地域における生鮮リンゴ生産の長期的戦略として、以下の活動が提案された。
 - 日本人専門家による苗圃（nursery farms）への技術的支援
 - 新たな品種の導入
- アウトプット 2 の記述及び指標の達成度合いから、アウトプット 2 は中間レビュー時点でかなりの程度で達成できているといえる。

(4) 上位目標の達成見込みについて

- 2018 年のドライアプリコット及び生鮮リンゴのフンザ・ナガール郡における販売総額が、2016 年の同金額に対して 15%増加するという実際の販売データが入手できていない現状では、上位目標の評価指標のデータが入手できないため、上位目標達成の見込みを判断するのは適切ではない。

3-2 評価結果の要約

(1) 妥当性

- 本プロジェクトは、パキスタンの開発計画/戦略、日本のパキスタンに対する援助政策、本プロジェクトの必要性、本プロジェクトのアプローチと高い整合性を有しているため、本プロジェクトの妥当性は高い。

(2) 有効性

- 本プロジェクトの有効性はやや低いと判断される。
- ①アプリコット加工品の生産及びマーケティングの改善（アウトプット 1）及び②生鮮リンゴ加工品の生産及びマーケティングの改善（アウトプット 2）は、パイロット地域の高品質のアプリコット加工品と生鮮リンゴの生産及びマーケティングの改善（プロジェクト目標）に必要不可欠な要素であるといえ、プロジェクト目標とアウトプット 1、2 の間の論理的関係は十分に説明できる。
- プロジェクト目標の達成に関して、中間レビュー時点でアウトプット 1 とアウトプット 2 の達成度は、満足できるレベルには達している。
- グレード A にグレードづけされたアプリコット、アプリコットカーネル、カーネル加工品、アプリコットオイルの合計販売金額に改善がみられるなら、プロジェクト実施の中間点において、プロジェクト目標の達成が期待できる。

(3) 効率性

- 本プロジェクトの効率性は中程度である。
- 投入の質と量に関しては、日本人専門家の派遣を除けば、パキスタン側、日本側ともに C/P の配置、機材の供与、海外研修、事務施設、設備の提供は比較的適切であったといえる。
- 投入のタイミングに関しては、2013 年 7 月初旬から 2014 年 10 月下旬まで日本人専門家の GB 地域への渡航が禁止されたことから、いくつかのプロジェクト活動に遅れがみられた。特に、アプリコットの栽培、アプリコットの加工に関する現場での専門家による直接指導

は 2015 年によく本格的に始まったばかりであり、このことが効率性を妨げる要因になっている。

- 日本人専門家が GB 地域に不在中は、農業局の支援で、対象 Local Support Organization (LSO) と意欲的な中核農家が彼ら自身の予算で剪定、芽継ぎ、接木、ボカシ/肥料の生産といった多くのキャンペーン活動を実施した。しかしながら、専門家不在中の剪定、摘果、整枝といった栽培技術及び技能に関しての農家の理解の度合いについては、技術的に確認する必要がある。
- 一部活動が遅延しているにもかかわらず、プロジェクト活動と投入により、ある程度のアウトプットが達成されている。日本人専門家の指導に基づき、農業局と対象 LSO が比較的円滑に本プロジェクトを運営している。

(4) インパクト

- 本プロジェクトのインパクトは現時点では判定できない。
- 中間レビュー時点では、上位目標達成の見込みを判断するのは適切ではない。しかしながら、以下のようにいくつかの正の影響がみられており、将来本プロジェクトによってもたらされる具体的なインパクトにつながるものが考えられる。
 - パイロットサイトの農家は、ボカシをアプリコット及びリンゴだけでなくジャガイモのような換金作物に適用していることが分かった。その地域の農家の収入向上につながっているとの説明があった。
 - 篤農家と中核農家は、他の農家へも普及を行う機会を得て、他県の農家に新たに学んだ技術と知識を普及している。
 - 2014 年 11 月の日本における上級マーケティングの研修の場において、フンザ・ナガール地域において果樹生産の農民団体を設立する提案が研修参加者からなされた。どのような形の団体にするか（作物別、地域別等）は、今後検討がなされる。
 - 何人かの女性は、本プロジェクト活動のおかげで現場でのビジネスやコミュニティレベルの普及活動に精力的に従事していることが分かった。中核農家の主導により、アリアバードのある女性団体〔Golden Jubilee Organization for Local Development (GOLD) の構成組織でもある Golden Jubilee Women's Organization〕は、本プロジェクトから搾油機の供与を受けて、搾油ビジネスを開始した。

(5) 持続性

- 本プロジェクトの総合的な持続性は中程度であると期待できる。

1) 政治面での持続性

- 市場志向の果樹製品の付加価値づけの受容及び推進は、パキスタンの開発計画と高い整合性を有しているため政治面での持続性は高い。

2) 組織面での持続性

- 組織面の持続性は中程度である。農業局は、GB 地域で農業面での開発を担う唯一の組織である。人事異動が頻繁にあることが、組織面での持続性を低める結果になった。

3) 財政面での持続性

- 財政面での持続性は中程度である。パキスタン側はプロジェクトの運営費として 997 万 6,550 Pakistani Rupee (PKR) を負担している。一方、日本側は運営費として 1,670 万円、現地通貨分で 1,565 万 9,940 PKR を負担している。パキスタン側のコーディネーターによると、パキスタン側は翌年の 2015-16 年度もほぼ同額の経費負担を行うとのことである。しかしながら、いくつかの LSO は、運営費の不足に直面しているようである。農業局及び本プロジェクトは、将来の経済活動実施のために LSO に対して何らかの措置を講じる必要がある。

4) 技術面での持続性

- 技術面の持続性は、中程度である。パイロット LSO の農家たちは、本プロジェクトにより得られた新しい技術及び技能を海外研修、セミナー、日本人専門家の直接指導を通して受け入れている。中核農家たちは、現在、新しい技術及び技能を彼ら自身の圃場において実践しているところである。対象 LSO の中核農家と普及員は、コミュニティのレベルにおいて、プロジェクトから得られた技能、技術、知識を普及することに専念している。
- 加えて、農業局の職員も本プロジェクトからの新しい技術及び技能を受け入れている。農業局は現在、県をまたがった新しいプロジェクトを構想中であり、これは、本プロジェクトから得られた経験及び技術を基に、対象作物のマーケティング、生産、加工に注力するものである。

3-3 効果発現に貢献した要因

(1) 計画内容に関すること

- 農業局と対象 LSO の間の協働と協力

(2) 実施プロセスに関すること

- 本プロジェクトの成果を普及するのに注力している意欲的な中核農家及び LSO

3-4 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

- 特になし。

(2) 実施プロセスに関すること

- 2013 年 7 月初旬から 2014 年 10 月下旬までの日本人専門家の GB 地域への渡航禁止
- 中央フンザ・ナガール地域におけるせん孔細菌病 (shot hole disease) の流行

3-5 結論

- 中核農家だけでなく農業局職員と対象 LSO の強いコミットメントのおかげで、プロジェクトの成果はますますのレベルの達成度に貢献している。しかしながら、日本人専門家の GB 地域の渡航禁止措置により遅れているいくつかの活動のために、プロジェクト目標の達成度は本

プロジェクト終了時の想定よりも低くなっている。その結果、本プロジェクトは、高い妥当性、やや低い有効性、中程度の効率性の下で、ある程度プロジェクトの成果を産出している。この状況に対処するために、プロジェクト目標の達成には十分な実施期間を確保することが必要である。本中間レビューチームは、本プロジェクトの実施期間を延長することを提案する。

- そのうえ、いくつかの指標は、現状に合致していないため改訂もしくは修正する必要がある。
- 残りの期間において、本プロジェクトは、民間セクターと連携しながら地域ブランドの構築及び LSO の能力開発を通して高品質のアプリコット加工品、マーケティングの推進に注力していく必要がある。

3-6 提言

(1) プロジェクトのマネジメント

1) Project Design Matrix (PDM) の改訂

- (すべての関係者に対して) プロジェクト目標及びアウトプットの指標は、現状及び実際のプロジェクトの現状に合わせるために部分的に修正することを提言する。

2) プロジェクト期間の延長

- (すべての関係者に対して) 本中間レビューチームは、本プロジェクトの実施期間を 2017 年 3 月まで延長することを提案する。

(2) 普及

1) 本プロジェクトの成果の普及

- (農業局に対して) 農業普及に関しては、本中間レビューチームは、農業局と本プロジェクトは中核農家及びマスタートレーナーの役割及び提供サービスの範囲を明確にするように提言する。LSO は、対象地域の栽培技術、加工技術、付加価値づけ、マーケティングの分野においてマスタートレーナーを各 1 名配置し、各村/住民組織 (Village Organization : VO/Women's Organization : WO) にて、各 1 名の中核農家を配置する。農業局は、LSO のマスタートレーナーに対して研修を行うことが期待される。
- (プロジェクトに対して) 本中間レビューチームは、農業局は県をまたがるレベルで園芸開発のためのプラットフォームを策定するよう提言する。
- (農業局に対して) 本中間レビューチームは、農業局は対象県ではない農業局職員及び対象ではない LSO を、プロジェクトサイトへの視察旅行を組織して一堂に会する機会を設けることを提言する。

(3) コミュニケーション

1) 農業局と対象 LSO の間の情報共有の促進

- (プロジェクト及び農業局に対して) 本中間レビューチームは、農業局は LSO に対して、モニタリングシートの提出を促進していくことを提言する。
- (プロジェクト及び農業局に対して) 本中間レビューチームは、プロジェクト及び農業局に対して、農家からの提案及び問題点を記載する欄を本プロジェクトによって開発

された四半期モニタリングシートに追加することを提言する。

2) 十分な議論に基づいた相互の同意

- (プロジェクト及び農業局に対して) 加工業者については、民間業者が農家にも得られた利益を公正に配分する意図を有している姿勢及び農家の意見を考慮して、プロジェクトと農業局の間の十分な議論に基づいた相互の同意の下に選定されるべきである。

(4) 高付加価値化

- (農業局に対して) 本中間レビューチームは、ジャム加工、ジュース加工、菓子等といった他の高付加価値製品を推進する必要があると提案する。

(5) 技術面の提言

1) 新しい技術及び技能に対する農家の理解の確認

- (農業局に対して) 農業局に対して農家のそれらの技術及び技能の理解を確認するように提言する。(例：アプリコットの硫黄燻蒸に対する理解)

2) 新たな技術及び技能の十分な適切性

- (農業局に対して) 本中間レビューチームは、アプリコットに係る摘果技術の適切性を検証する必要があると提言する。

3) 土壌試験の必要性

- (プロジェクトに対して) 農業局内の土壌試験室と協働で土壌試験を実施するように強く推奨する。

3-7 教訓

(1) プロジェクト開始初期段階の関係者の意欲づけ

- 本プロジェクトは、実施初期段階に中核農家に本邦研修機会を提供し、結果として、中核農家のプロジェクト活動に対する高い意欲をもたらす結果となった。プロジェクト実施初期段階に本邦研修の機会を提供することが、コミュニティのために働くことが期待されている中心的役割を担う人材に意欲づけをもたらす効果的であった。

(2) 政府とコミュニティを基礎とした組織間の協調及び協力

- 本プロジェクトにおいて、効果的なプロジェクトの成果の普及は、農業局と対象 LSO 間の協調及び協力によってもたらされている。具体的には、農業普及システムのなかで LSO をコミュニティのファシリテーターと位置づけることが、効果的な農業普及の結果をもたらしている。

(3) 民間セクターのアクター活用

- 民間セクターとの協調は、本プロジェクトの特徴の一つである。加工業者、トレーダー、コンサルタントといった民間セクターの関係者は、海外研修に参加し、市場調査に参加

し、そして、農家へ研修を実施した。本プロジェクトは、民間セクターからの知識・経験を活用してきており、結果として、パイロット地域の何人かの農家は国内市場（DCM）及び国際市場へのアクセスを得ることに成功した。その他の農家は、実践的な加工技能及び基本的な農業普及の技能を身に付けた。市場開発やバリューチェーン開発に焦点を当てた技術協力プロジェクトにとって、民間セクターのアクターを活用したことが有用であったといえる。

3-8 フォローアップ状況

- 特になし。

評価調査結果要約表（英文）

I. Outline of the Project	
Country : Islamic Republic of Pakistan	Project title : The Project for Promotion of Value Added Fruit Products in Gilgit-Baltistan In the Islamic Republic of Pakistan
Issue/Sector : Agricultural and Rural Development	Cooperation scheme : Technical Cooperation
Division in charge : JICA Pakistan Office	Total cost : 3.2 Hundred Million Yen (Approx.)
Period of Cooperation	(R/D): 2012/8/22 ~ 2016/8/21 (Four (4) years)
	Partner Country's Implementing Organization : Department of Agriculture (DoA), the Government of Gilgit-Baltistan
	Supporting Organizations in Japan :
	Related Cooperation : Nil
1. Background of the Project	
<p>In Gilgit-Baltistan that is located in the northern mountainous area of the Islamic Republic of Pakistan, GDP per capita is estimated to be about USD 600 (whereas it is USD 1,044 in the whole country of Pakistan) and 29% of the population is considered to be poor.</p> <p>To deal with the above problems, Japan International Cooperation Agent (JICA) conducted a basic study to collect and verify the information on the horticulture sector in Gilgit-Baltistan for the period from December 2009 until May 2010. After that, JICA conducted a detailed planning survey (the "Survey") for the period from June to July in 2011, for the purpose to clarify the problems related to the value chain of apricots, apples, cherries and their processed products, identify the fruit products of which problems can be dealt with and for which market demand is stable, and work out the cooperation plan that enables the community to construct a sustainable production system.</p> <p>In response to the result of the Survey, in order for the farmers to stably and sustainably produce the high-value-added apricot processed product and apples, JICA agreed with the Pakistani side on the framework of the technical cooperation project of which goals are (i) for DoA to promote the cultivating and processing technologies, (ii) to construct the system for farmers to produce the high quality fruit products demanded by the market and sell them to private organizations and (iii) to construct the system for the private organizations to develop new sales channels.</p> <p>Approaching the completion of the project in August 2016, JICA decided to conduct a mid-term review from June to July 2015 with the objectives of verifying and analyzing the achievement of project purpose and outputs, the implementation process, evaluating the Project in terms of five evaluation criteria and compiling a joint review report based on the survey results.</p>	
2. Project Overview	
(1) Overall Goal	
Production and marketing of apricot products and apples are improved in the project area.	
(2) Project Purpose	
Production and sales of high quality apricot products and apples are increased in the pilot areas.	
(3) Outputs	
(Output1) Production and marketing of apricot products are improved.	
(Output2) Production and marketing of apples are improved.	
(4) Inputs	

Japanese side : <u>Total cost</u>	19,122,939 Yen		
Experts	13 Experts	Equipment	2,422,939Yen
Local cost	16,700,000 Yen	Trainees	85 C/Ps
Moroccan side : <u>Total cost</u>	9,846,814 Yen		
Counterparts (C/Ps)	18 C/Ps	Provision of office space (Gilgit and Karimabade)	
Local Cost	9,846,814Yen		

II. Review Team

Members of Review Team	Mr. Mitsuyoshi KAWASAKI	Leader	Chief Representative , JICA Pakistan Office, JICA	
	Dr. Shigemochi HIRASHIMA	Agricultural economics	Visiting Senior Advisor, JICA	
	Dr. Naoto WATANABE	Processing of agricultural products	Agricultural Development Consultant, Agri Energy International Co., Ltd.	
	Mr. Satoshi HAMANO	Cooperation Planning I	Representative , JICA Pakistan Office, JICA	
	Mr. Amir Abbas Bukhari	Cooperation Planning II	Senior Programme Officer, JICA Pakistan Office, JICA	
	Mr. Akira OGASAWARA	Evaluation and Analysis	Consultant, VSOC Co., Ltd.	
	Mr. Muhammad Nazir Khan	Leader	Deputy Chief, Planning and Development Dept. the Government of Gilgit-Baltistan	
	Mr. Ghulam Mustafa	Deputy Leader	Deputy Director Projects, DoA, the Government of Gilgit-Baltistan	
	Mr. Javed Akhtar	Focal Person	Deputy Director, DoA, the Government of Gilgit-Baltistan	
	Period of Review	2015/ 6/10~7/2	Type of Evaluation : Mid-term Review	

III. Results of Evaluation

3.1. Measurement of Results

(1) Prospects of the project purpose

- (Indicator 1) Data obtained in baseline survey (1st year) and the mid-term study (3rd year) is summarized below for comparison.

	1 st year	3 rd year
The total quantities of A-grade	5,947 kg	5,901 kg

- (Indicator 2) Data obtained in baseline survey (1st year) and the mid-term study (3rd year) is summarized below for comparison.

	1 st year	3 rd year
Apricot kernel	4,483 kg	4,166 kg
Apricot oil	0 liters	25 liters

- (Indicator 3) Data obtained in baseline survey (1st year) and the mid-term study (3rd year) is summarized below or comparison.

	1 st year	3 rd year
% of apples graded as S3 on average	0 %(Graded as S1)	76 %

- According to the fulfillment of the three (3) indicators above for the project purpose, there is no obvious evidence to judge the achievement of the project purpose at the end of the Project. It is judged that the project purpose would be achieved at the end of the Project if there is positive change in total sales of A-graded apricot, apricot kernels, kernel products, and apricot oil.

(2) Output 1

- (Indicator 1-1) The Project is formulating manuals for cultivation, processing and marketing based on project activities. As of the mid-term review, topics and contents such as pruning, thinning, grafting, compost, processing (drying and oil extraction) and marketing would be included. Furthermore, the Project has a plan to formulate guidebook on apple and apricot cultivation and processing by the time of project termination. Currently, experts are conceptualizing its contents and editing strategy.
- (Indicator 1-2) The mid-term study conducted by the Project in April 2015 indicated that Rootstock management :99% (those who provide water to young trees among those who have young trees); Grafting :16% (those who conduct cleft grafting, side grafting according to the guidance of Japanese experts); Pruning :45% (those who use saw for pruning); Pesticide application: 2% (those who use BCL); Application of newly introduced organic fertilizer :1% (those who use Bokashi and/or MML); Harvesting 25% (those who use trampolin for harvesting); Processing1 49% (those who wash fresh apricot before drying it); Processing2 79% (those who wash hands before you cut fresh apricots); Processing3 7% (those who use knife when cutting fresh apricots); and Processing4 17% (those who grade by level of maturity and/or damage).
- (Indicator 1-3) The draft of marketing and brand strategies of apricot products in the Project areas for the DC and international markets were formulated. The strategy in the DC was developed (i) to increase the market share and (ii) to propose high quality and unique taste as position products.
- On the other hand, the international marketing strategy was proposed (i) to target mainly young women concerned about beauty who are from middle and higher income groups and (ii) to identify apricot products as position products in upscale department stores.
- According to the brief description on Output 1 as stated above and the fulfillment of indicators, Output 1 has been produced to some extent at the time of the mid-term review.

(3) Output 2

- (Indicator 2-1) The Project is formulating manuals for cultivation, processing and marketing based on project activities. As of the mid-term review, the following topics and contents would be included: Furthermore, the Project has a plan to formulate guidebook on apple and apricot cultivation and processing by the time of project termination.
- (Indicator 2-2) The mid-term study conducted by the Project in April 2015 indicated that Disbudding and thinning fruits :23%; Grafting :22% (those who conduct cleft grafting, side grafting according to the guidance of Japanese experts); Seeding production :99% (those who provide water to young trees among those who have young trees); Pruning :68% (those who use saw for pruning); Pesticide application :6% (those who use BCL); and Application of newly introduced organic fertilizer: 6% (those who use Bokashi and/or MML).
- (Indicator 2-3) Data obtained in baseline survey (1st year) and the mid-term study (3rd year) is summarized below for comparison.

	1 st year	3 rd year
Harvesting	19 % (49HHs)	46% (122HHs)
Grading and packing	9% (21HHs)	43% (115 HHs)

- (Indicator 2-4) The mid-term study conducted by the Project in April 2015 indicated that the number of farmers in the project site who record the amount of apple produced and sold were 0 HHs in the 1st year (2012) and the 3rd year (2015) respectively.
- (Indicator 2-5) The following marketing strategies of apple for DCM were proposed:
 - -improve quality of apples by better cultivation technique/skill and better attention,
 - -improve harvesting, grading, and packaging, and
 - -main target market DCM (mainly wholesale market).
- In addition to those, as longer term strategy for apple production in the GB region, the following activities were suggested:

- -Technical assistance on nursery farms by JICA experts, and
- -Introduction of new variety.

- According to the brief description on Output 2 as stated above and the fulfillment of indicators, Output 2 has been produced significantly at the time of the mid-term review.

(4) Overall Goal

- There is no actual data on sales amount of dried apricots and apples in Hunza-Nagar district in 2016 and 2018. Currently, it is not appropriate now to determine the prospective of direction of achievement of overall goal of the Project since there is not practical data available for the indicator of the overall goal.

3.2. Summary of Review Results

(1) Relevance

- The relevance of the Project is high since the Project is highly consistent with the Pakistani development plans/strategy, Japanese assistance strategy for Pakistan, necessity of the Project and approach of the Project.

(2) Effectiveness

- The effectiveness of the Project is relatively low.

- Logical sequence of the causal relationships between Outputs 1, 2 and the project purpose 1 is strong enough since (i) improved production and marketing of apricot products (Output 1) and (ii) improved production and marketing of apples (Output 2) are indispensable to increased production and sales of high quality apricot products and apples in the pilot areas (project purpose).

- Achievement level of Output 1 and Output 2 with regards to the achievement of project purpose is satisfactory.

- In the middle of the project implementation, the achievement of the project purpose would be expected if there is positive change in total sales of A-graded apricot, apricot kernels, kernel products, and apricot oil.

(3) Efficiency

- The efficiency of the Project is fair.

- With regards to quality and quantity, input from the Pakistani side and Japanese side such as allocation of C/Ps, allocation of Japanese experts, provided equipment, overseas training, offices and facilities are relatively appropriate except not sufficient allocation of Japanese experts.

- With regards to timing, the Japanese expert team was banned visiting of the GB region in the beginning of July 2013 to the beginning of October 2014, which resulted in delayed progress in some project activities. In particular, in-site training of cultivation techniques in apricots cultivation and processing directly by the Japanese experts just started in 2015, which inhibited the efficiency.

- During the absence of Japanese experts in the GB region, with the assistance of DoA, target LSOs and motivated core farmers carried out many seasonal activities by their own resource such as campaigns on pruning, budding and grafting, Bokashi/compost preparation. However, understanding of farmers on the cultivation techniques and skills introduced during that period such as pruning, thinning and training needs to be confirmed.

- Project activities utilizing project inputs have produced outputs to some extent in spite of some delay in project activities. However, the Project has been operated relatively smoothly by DoA and target LSOs with the guidance of Japanese experts.

(4) Impact

- The impact of the Project is undetermined.

- As of the mid-term review, it is not appropriate now to determine the prospective of direction of achievement of overall goal of the Project.

- However, the following positive signs have been observed, which would lead to concrete impact brought about by the Project in the future.

- It is found out that farmers in the pilot areas began to apply Bokashi to cash crops such as potato as well as apricot and apples, which may lead to increase in income of farmers in the areas.
- Some prominent farmers and core farmers had opportunities to disseminate them to other farmers in the non-target districts such as Gilgit District.
- A proposal to form farmers' associations for fruits production in the Hunza-Nagar areas was proposed by the participants during the discussion at the advanced marketing training held in Japan in November 2014. However, there is still issue to be solved with regards to what structure of the association should take.
- It is found out that some women are actively involved with local business and extension activities at the community level thanks to the Project activities. A woman organization in Aliabad (Golden Jubilee Women's Organization, a member organization of GOLD) started oil extraction as pilot activity by using oil extract machine procured by the Project, led by a core farmer.

(5) Sustainability

- Overall sustainability of the Project is expected to be fair.

(i) Political sustainability

- Political sustainability is relatively high since the acceptance and promotion of market-oriented value addition of fruits products is highly consistent with the Pakistani development plan.

(ii) Organizational sustainability

- Organizational sustainability is moderate. DoA is the only organization that is in charge of agricultural development in the GB region. However, in April 2015, project manager and three (3) main C/Ps in charge of fruit cultivation (apple), fruit cultivation (apricot) and fruit processing were transferred, which lowered the organizational sustainability.

(iii) Financial sustainability

- Financial sustainability is fair. The Pakistani side shared local operational cost of 9,976,550 PKR as compared with the Japanese side who has shared local operational cost of 16,700,000 JPY, which is equivalent to 15,659,940 PKR. The Pakistani side is expected to share the local cost for project activities in the remaining period of the implementation. According to the project coordinator from the Pakistani side, the Pakistani side will share an equivalent amount of local operational cost for 2015-16 as much as it had shared before. However, it is found out some LSOs seems to suffer from a lack of operation funding. The Project as well as DoA needs to take some measures for LSOs so as to operate their activities in the future.

(iv) Technical sustainability

- Technical sustainability is fair. Farmers in pilot LSOs accept new techniques and skills obtained by the Project through overseas training, seminars and direct guidance by Japanese experts. Core farmers in the project areas are currently attempt to apply the new techniques and skills to their own fields. Core farmers and extension officers of target LSOs have committed to disseminating skills, techniques and knowledge obtained by the Project at the community level.

- Furthermore, DoA staff accepts new techniques and skills obtained from the Project. DoA is currently conceptualizing a district-wise new project focusing on marketing, production and processing of target fruits based on the experience and techniques obtained from the Project.

3.3. Factors that promoted realization of effects

(1) Factors concerning to Planning

- Collaboration and cooperation between DoA and target LSOs

(2) Factors concerning to the Implementation Process

- Motivated core farmers and LSOs who are committed to disseminating project outcomes

3.4. Factors that impeded realization of effects

(1) Factors concerning to Planning

- Ban on visiting of Japanese experts to the GB region in the beginning of July 2013 to the beginning of October 2014.
- Epidemic of shot hole disease on apricot in the central Hunza and Nagar areas

(2) Factors concerning to the Implementation Process

- Nil.

3.5. Conclusion

- Due to some delayed activities caused by the ban on visiting of Japanese experts to the GB region in July 2013 to October 2014, the achievement level of the project purpose will be lowered than expected at the termination of the Project even though strong commitment of DoA officials and target LSOs as well as core farmers has contributed to the current moderate achievement level of the project outcomes. As a result, the Project has produced its outcomes to some extent with high relevance, relatively low effectiveness and fair efficiency. In response to that situation, the mid-term review Team suggests that the duration of Project be extended so as to ensure that sufficient period of implementation is assured for the achievement of the project purpose.
- Furthermore, some indicators need to be revised or modified since they are not consistent with the current situation.
- In the remaining period of implementation, the Project needs to put stress on processing of quality apricot products, promotion of marketing through regional branding and capacity development of LSOs in collaboration with the private sector.

3.6. Recommendations

(1) Management of the Project

(i) Revision of PDM

- (For all concerned) Indicators for the project purpose and outputs have partially modified to fit into the current and actual situation.

(ii) Extension of the Duration of the Project

- (For all concerned) MTR Team suggests that the duration of Project be extended until March 2017.

(2) Dissemination

(i) Dissemination of Project Outcomes

- (For DoA) MTR Team suggests that DoA and the Project Team clarify the roles and service areas of core farmers and master trainers. It is proposed that LSOs have master trainers in cultivation technology, in processing technology, in value addition, and in marketing at LSO level, and have one (1) core farmer at each village/women organization. DoA is expected to train master trainers in LSOs.
- (For DoA) MTR Team suggests that DoA have the horticulture development platform at the district/district-wide level.
- (For PT) MTR Team suggests that DoA consider providing an opportunity to gather DoA staff in non-target districts and non-target LSOs.

(3) Communication

(i) Promotion of Information Sharing between DoA and target LSOs

- (For PT & DoA) MTR Team suggests that DoA consider encouraging LSOs to submit quarterly monitoring reports for prompt feedback.

- (For PT & DoA) MTR Team suggests that the Project Team and DoA consider modifying the format of quarterly monitoring sheet by adding some columns for suggestions and problem from farmers for prompt feedback.

(ii) Mutual Consensus under the Thorough Discussion

- (For the Project Team and DoA) It is recommended that a processing firm should be selected through mutual consensus of the Project, DoA under the thorough discussion in consideration of favorable attitude to farmers and farmers' opinions.

(4) Value Addition

- (For the Project Team) MTR Team suggests that the Project need to consider producing other value-added processing products such as jam, juice, sweets, etc. as potential products.

(5) Technical Aspects

(i) Confirmation of Understanding of Farmers on new Techniques and Skills

- (For DoA) MTR Team suggests to DoA that understanding of farmers on new techniques and skills be confirmed. (e.g. sulfur fumigation)

(ii) Adequate Appropriateness of new Techniques and Skills

- (For the Project Team) MTR Team suggests that appropriateness of thinning of apricot need to be adequated.

(iii) Necessity of Soil Test

- (For the Project Team) It is strongly recommended to apply soil test in collaboration with Soil Testing Laboratory, DoA.

3.7. Lessons Learned

(1) Motivation of Stakeholders in the Initial Stage of the Project

- The Project provided opportunities to receive training in Japan for core farmers in the initial period of the Project, consequently, core farmers were highly motivated to work for the project activities. It was effective that the provision of training opportunities in Japan effectively motivated key persons who were expected to work for communities in the initial stage of the Project.

(2) Collaboration and Cooperation between the Government and Community-based Institution

- In the Project, effective dissemination of project outcomes has been attained through the collaboration and cooperation between DoA and target LSOs at the LSO and community levels. In concrete, utilization of LSOs as facilitator of community in the agricultural extension system results in effective agricultural extension.

(3) Utilization of Actors from the Private Sector

- Collaboration with the private sector is one of the characteristics of the Project. Stakeholders from the private sector such as processor, trader and consultant participated in overseas training, joined in market survey and study tours, and implemented training sessions to farmers. The Project has utilized knowledge and experience from the private sector, consequently, some farmers in the pilot areas succeeded in having access to DCM and the international market. Other farmers have obtained practical processing techniques and basic extension skills. It is useful for a technical assistance project focusing on marketing development and/or value chain development to utilize actors from the private sector.

3.8. Follow-up Situation

-Nil.

(end)

第1章 イントロダクション

1-1 背景

パキスタン・イスラム共和国（以下、「パキスタン」と記す）において農業は国内総生産（GDP）の21.4%、労働人口の43.6%を占める基幹産業である（Vision 2025）。主な農産物は、コムギ、メンカ、サトウキビ、メイズ等であるが、近年、消費者の需要は炭水化物を多く含む穀物や未加工の食料品から、より所得弾力性の高い園芸作物や畜産品にシフトしてきており、パキスタン政府は競争性の高い作物の生産や加工を通じた高付加価値の付与を開発戦略の一つとして掲げている。

パキスタンの北部の山岳地帯に位置するギルギット・バルティスタン地域（GB 地域）の1人当たり GDP は約 600 ドルと推定されており（パキスタン全体では 1,044 ドル）、人口の 29% は貧困であるとされている。GB 地域は年間降水量約 250mm の乾燥した気候にあるが、氷河から流れる水資源が豊富にあり、農民は小規模灌漑を造成して、その冷涼な気候に適した園芸農業を営んでいる。GB 地域では世帯収入における農業収入は約 4 割であり、そのうち穀物・果樹・野菜等の農作物からの収入がおよそ半分を占め、さらにそのなかの 4 割が果樹から発生しており、農家の貴重な現金収入源となっている。しかしながら、市場までのアクセスの困難さ、栽培技術やマーケティング不足により多くの作物は廃棄されてしまっている状況にある（GB 地域の代表的な作物であるアプリコットの廃棄量は生産量の 37%、リンゴの廃棄量は 22%）。これらの状況を踏まえ、パキスタン政府は 2010 年に日本政府に対して支援の要請を提出した。

本要請に基づき、日本政府は要請を採択し、JICA は 2011 年 6 月から 7 月にかけて詳細計画策定調査を実施した。その結果、①アプリコットに関しては生食用の場合は 3 日で傷んでしまうためドライアプリコットに加工する必要があるが、乾燥させるための敷地が限られているために収穫量の一部しか加工できておらず、効率的に乾燥することができる設備を導入することで販売量を増やすことができること、②ドライアプリコットを生産する際の副産物であるカーネルを利用したアプリコットオイル、カーネルナッツも高付加価値化の可能性があり、安定した市場ニーズを見込めること、③リンゴに関しては品質が低いために販売できずに自家消費もしくは廃棄されており、適切な栽培技術や梱包技術の導入により品質を向上させることで販売量を増やすことができること、④チェリーに関しては既に高品質であり、十分に販売されているため支援の必要性が低いこと、などが確認された。また、付加価値の高いアプリコット加工品とリンゴを農家が安定的かつ持続的に生産できるようにするために、農業局（DoA）や農民組織による農家への栽培・加工技術の普及や加工・梱包に必要な設備・資材の導入、また、市場が求める品質の果樹産品を農家が生産し、農業局のマーケティング支援を受けて農家が果樹産品を民間組織に販売する体制及び民間組織が新たな販路を開拓できる体制を構築することが求められていることを確認した。その後、2012 年 8 月に 4 年間の本プロジェクトが開始となった。

開始後、2013 年 6 月にナンガ・パルパット山にてテロが起きたことから、2014 年 10 月下旬まで日本人専門家の立ち入りを禁止したため、今般 2015 年 6 月に中間レビュー調査を行う運びとなった。

1-2 プロジェクトの概要

(1) 上位目標

GB 地域において、アプリコット加工品とリンゴの生産とマーケティング体制が改善される。

(2) プロジェクト目標

パイロット地域において、高品質なアプリコット加工品とリンゴの生産量と販売量が増加する。

(3) アウトプット

アウトプット 1：アプリコット加工品の生産とマーケティング体制が改善される。

アウトプット 2：生鮮リンゴの生産とマーケティング体制が改善される。

(4) 事業スケジュール

2012 年 8 月 22 日から 2016 年 8 月 21 日（4 年間）

1-3 本中間レビューの目的

ギルギット・バルティスタン政府（以下、GB 政府）と合同で本プロジェクトの以下の点について分析し、合同評価報告書に取りまとめ、今後のプロジェクト展開等について協議を行い、合同調整委員会（Joint Coordination Committee：JCC）でミニッツにて合意することを目的とする。

- ① 投入実績の確認
- ② 各成果の達成度
- ③ 案件目標の達成見込み
- ④ 外部条件
- ⑤ 計画の進捗状況
- ⑥ 実績の 5 項目評価
- ⑦ 現在の課題・阻害要因及び貢献要因
- ⑧ 計画（Project Design Matrix：PDM 等）修正の要否
- ⑨ 提言

1-4 本中間レビューの日程

2015 年 6 月 10 日から 2015 年 7 月 2 日。詳細は付属資料 13 のとおり。

1-5 本中間レビューチーム団員

[日本側]

担当分野	氏名	所属/役職
総括	河崎 充良	JICA パキスタン事務所 所長
農業経済	平島 成望	JICA 国際協力専門員
農産物加工	渡部 直人	株式会社アグリ・エナジーインターナショナル
協力企画 I	濱野 聡	JICA パキスタン事務所 所員
協力企画 II	Mr. Amir Bukhari	JICA パキスタン事務所 Senior Programme Officer
評価分析	小笠原 暁	株式会社 VSOC 事業部 コンサルタント

[パキスタン側]

担当分野	氏名	所属
Leader	Mr. Muhammad Nazir Khan	Deputy Chief, Planning and Development Dept. the Government of Gilgit-Baltistan
Deputy Leader	Mr. Ghulam Mustafa	Deputy Director, DoA, the Government of Gilgit-Baltistan
Focal Person	Mr. Javed Akhtar	Deputy Director, DoA, the Government of Gilgit-Baltistan

第2章 中間レビューの方法

2-1 中間レビューの枠組み

本中間レビューは、「新 JICA 事業評価ガイドライン第1版」に基づき実施された。プロジェクトの実績の確認は2014年3月30日に改訂された PDM-1 (Ver. 2) を基にレビューが実施された (付属資料2を参照)。

2-2 中間レビューの手順

- ① データ/情報収集：パキスタン及び GB 地域の果物栽培（アプリコット及びリンゴ）、普及システム、コミュニティの組織（Local Support Organization : LSO）、マーケティングに関するデータ/情報を資料レビュー、関係者へのインタビュー/質問票調査、実地踏査を通して収集する。
- ② プロジェクト実績の確認：調査を通してプロジェクト活動の進捗を確認する。これらの結果を基にアウトプットとプロジェクト目標の達成度を PDM の評価指標に基づいて評価する。
- ③ 実施プロセスの確認：プロジェクトの実施のプロセスを確認してプロジェクト活動がプロジェクト計画どおりに実施されているか、確認するためにレビューを行う。加えて、プロジェクトの実施プロセスに影響を及ぼしているプロジェクト実施の促進要因、阻害要因を特定する。
- ④ 評価5項目（妥当性、有効性、効率性、インパクト、持続性）による案件の評価：プロジェクトの実績と実施プロセスの確認を基に、プロジェクトの分析及び評価を行う（表2-1を参照）。
- ⑤ 提言・教訓の策定：プロジェクトのレビュー結果から提言・教訓を策定する。

表2-1 評価5項目の定義

1) 妥当性	プロジェクトのめざしている効果（プロジェクト目標や上位目標）が、受益者のニーズに合致しているか、問題や課題の解決策として適切か、相手国と日本側の政策との整合性はあるか、プロジェクトの戦略・アプローチは妥当か、公的資金である ODA で実施する必要があるかなどといった「援助プロジェクトの正当性・必要性」を問う視点。
2) 有効性	アウトプット及びプロジェクト目標の達成度の確認とアウトプットとプロジェクト目標の間の論理的関係を考察する。
3) 効率性	タイミング、質、量、時間などの視点でアウトプットと投入/活動の間の関係に焦点を置いて分析すること、主にプロジェクトのコストと効果の関係に着目し、資源が有効に活用されているか（あるいはされるか）を問う視点。
4) インパクト	プロジェクト実施によりもたらされる、より長期的、間接的效果や波及効果を見る視点。予期していなかった正・負の効果・影響を含む。
5) 持続性	プロジェクト終了後のプロジェクトの成果が持続または拡大する程度を考察することにより、政治的/制度的、組織的、財政的、技術的な側面でプロジェクトを評価する視点。援助が終了しても、プロジェクトで発現した効果が持続しているか（あるいは持続の見込みはあるか）を問う視点。

第3章 プロジェクトの実績

3-1 投入

3-1-1 日本側の投入

(1) 専門家の派遣

合計で 13 名の日本人専門家が派遣されており、Man/Month (MM) の合計は 76.19MM であった。専門家の派遣分野の内訳は総括、普及システム、副総括、マーケティング、果樹栽培 (アプリコット)、果樹栽培 (リンゴ)、病虫害対策、加工、サプライチェーンマネジメント、第三国研修、業務調整であった。これらの専門家の派遣詳細は、付属資料 3 「1. 専門家の派遣」のとおり。

(2) 機材供与

日々のプロジェクト活動のために機材が供与されており、その総額は、242 万 2,939 円であった。複合型プリンター (コピー機)、冷蔵/冷凍庫、PC、カラープリンター、白黒プリンター、ジェネレーター、糖度計、酸定量計、プロジェクター、アプリコット搾油機、バイク等が供与された。詳細は、付属資料 3 「2. 供与機材リスト」のとおり。本中間レビューチームは、活用されていない機材はないことを確認した。

(3) 運営費の負担

日本側は、本プロジェクト実施の運営費を負担している。合計金額は、付属資料 3 「3. 運営費の負担」に取りまとめられているように 167 万円であった。

(4) 海外研修

合計で 85 名の農業局のカウンターパート (C/P)、LSO 所属の農家、民間企業の職員が本邦を含むトルコ、タイにおける海外研修に参加した。彼らは基本的な栽培技術、加工、マーケティングの技術を学んだ。研修参加者の詳細は付属資料 3 「3. 日本と他国における研修」のとおり。

3-1-2 パキスタン側の投入

(1) C/P の配置

合計で 18 名のプロジェクトダイレクター、プロジェクトマネジャー、プロジェクト調整員、普及、マーケティング、果樹栽培、果樹加工及び普及の分野の職員が C/P として配置されている。詳細は付属資料 4 「1. カウンターパートの配置」のとおり。

(2) 施設の提供

施設、機材がパキスタン側から提供されている。農業局ギルギット本部及び農業局フンザ・ナガール郡の事務施設 (カリマバード)、事務スペース等である。

(3) 運営費の負担

農業局は、プロジェクト活動〔設立費（人件費）、農業局食品加工センター¹、消耗品、運営のための予算〕として 2012 年 7 月から 2015 年 6 月にかけて 1,548 万 6,000 Pakistani Rupee (PKR)、日本円にして、1,585 万 2,700 円を支出している。本プロジェクトの運営に直接かかる経費としては、消耗品、運営のための予算の合計として、パキスタン側は 997 万 6,550 PKR、日本円で 984 万 6,814 円を支出している。詳細は付属資料 4 「2. 運営費の負担」のとおり。

3-2 アウトプット

各アウトプットのプロジェクト活動の進捗状況は、付属資料 5 の記述のとおり。それに加えて、プロジェクトが開発した研修教材は、付属資料 6 に示されたとおりである。プロジェクト要約、指標の日本語記述は、英文がオリジナルであるため、参考として記した。

3-2-1 アウトプット 1

アウトプット 1	Production and marketing of apricot products are improved. (アプリコット加工品の生産とマーケティング体制が改善される。)
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アウトプット 1 の指標の達成度合いを以下に示す。

指標	指標の達成状況
Indicator 1-1. Manuals for cultivation, processing and marketing. (栽培、加工、マーケティングのマニュアルが作成される。)	<p>本プロジェクトは、プロジェクト活動を基に栽培、加工、マーケティングのマニュアルを作成している。中間レビュー時点で、以下のトピック及び内容を含めている。</p> <ul style="list-style-type: none"> - Fruit Thinning (Apricot) - Organic Insect Repellent - Bio-Insecticide (Apricot) - Compost (Apricot) - Grafting and Budding (Apricot) - Mountain Micro-Organism Liquid (MML) (Apricot) - Lime sulfur mix and Bordeaux mix (Apricot) - Pruning (Apricot) - Dried Organic Apricot Method - Apricot Drying Brochure - Dry Apricot Processing - Kernel nuts Grading - Brochure of Apricot Oil Extraction - Overview of Market in DC - Overview of Markets for Apricot 2013 <p>そのうえ、本プロジェクトは、リンゴとアプリコット栽培、加工に関する書籍を編集することを計画中である。現時点では、専門家は、その内容及び編集方針を構想中である。</p>

¹ 農業局食品加工センターは、アプリコット、クワ等を含む、農業局の加工施設であり、プロジェクトの成果を基に年4回程度農家に対して加工研修を実施しているとのこと。

<p>Indicator 1-2. The percentages of farmers in the pilot LSOs who apply the following technique in apricot cultivation and processing as per guidance by the Project reach to the indicated numbers (percentages of farmers who apply these techniques before the project start are 0%) .</p> <ul style="list-style-type: none"> ・Root stock management (50%) ・Grafting (50%) ・Pruning (50%) ・Pesticide application (50%) ・Fertilization (50%) ・Processing (50%) <p>[プロジェクトで指導した栽培技術を農家が適用する（台木管理 50%、接木 50%、剪定 50%、虫害防除 50%、有機肥料 50%、加工 50%）。]</p>	<p>2015年4月に実施された中間調査の結果（中間調査の質問票は、付属資料7参照）によると、第3年次におけるもともとのプロジェクト地域（コントロールグループを含む）の農家の割合は以下のとおりである。</p> <ul style="list-style-type: none"> ・台木管理：99%（若木を所有している農家のなかで若木に水やりを使用している農家） ・接木：16%（日本人専門家の指導により割り接ぎ、切り接ぎを実践している農家） ・剪定：45%（剪定にのこぎりを使っている農家） ・新しく導入された有機肥料の適用：1% [ボカシや MML (Mountain Micrograms Liquid) を使っている農家] ・収穫：25%（収穫にトランポリンを使用している農家） ・加工1：49%（乾燥前に生鮮アプリコットを洗っている農家） ・加工2：79%（生鮮アプリコットを切る前に手を洗っている農家） ・加工3：7%（生鮮アプリコットを切る際にナイフを使用している農家） ・加工4：17%（熟度や傷み具合によりグレーディングを行っている農家）
<p>1-3. Marketing plan (including regional branding plan, etc.) for apricot products is developed focusing on sustainable farmers' income generation. (農家の持続的な収入のためにアプリコット製品に係るマーケティングプランが作成される。)</p>	<p>2014年11月に日本で実施された上級マーケティング研修及び同年12月のセミナーの際に、国内市場向け・国際市場向けのアプリコット加工品のマーケティング戦略及びブランド戦略案が作成された。国内市場向けには、①市場シェアを拡大し、②高品質の加工品・独自の味を主力商品として提案することとしている。具体的には、高品質のアプリコット加工品に注力すること、高価格を維持すること、卸売業者、小売業者をターゲットにすること、商品を展示会にて宣伝、小売業者に直接販売する旨の実施方針が計画された。</p> <p>一方で、国際マーケティング戦略が提案され、①自然、オーガニック、健康的な食生活が美を高めると認識している美に関心があるミドルクラスあるいは高収入グループの若い女性をターゲットにすること、②アプリコット加工品を上流層向けの百貨店といった特殊な健康食品店における主力商品と位置づけること、が提案された。</p>

栽培、加工、マーケティングの各種マニュアルが整備され、プロジェクト地域におけるDCM (Down County Market) 及び国際市場向けのアプリコット加工品のマーケティングだけでなく国際マーケティング戦略、ブランディング戦略が策定され、アウトプット1は、プロジェクト実施の中間時点である程度達成できている。しかしながら、日本人専門家のプロジェクト地域の渡航禁止措置により、いくつかのアプリコット栽培技術及び加工技術を実践したパイロットLSOの活動実績は計画より遅れている。本プロジェクトは今後、特に殺虫剤の適用、新たに導入された有機肥料の適用、生鮮アプリコットを切るときにはナイフを使うことといった技術の

普及及びその実践に注力していく必要がある。

指標1-2の目標値は、期待されたよりアプリコット栽培と加工に関する技術移転の機会が少なかったこともあり、再検討する必要がある。

アウトプット1の記述及び指標の達成度合いから、アウトプット1は中間レビュー時点である程度は達成できているといえる。

3-2-2 アウトプット2

アウトプット2	Production and marketing of apples are improved. (生鮮リンゴの生産とマーケティング体制が改善される。)
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アウトプット2の指標の達成度合いを以下に示す。

指 標	指標の達成状況
2-1. Making manuals for cultivation, processing and marketing. (栽培、加工、マーケティングのマニュアルが作成される。)	<p>本プロジェクトは、プロジェクト活動を基に栽培、加工、マーケティングのマニュアルを作成している。中間レビュー時点で、以下のトピック及び内容を含めている。</p> <ul style="list-style-type: none"> - Fruit Thinning (Apple) - Apple Cultivation Calendar - Organic Insect Repellent - Bio-Insecticide (Apple) - Compost (Apple) - Grafting and Budding (Apple) - Mountain Micro-Organism Liquid (MML) (Apple) - Lime sulfur mix and Bordeaux mix (Apple) - Pruning (Apple) <p>そのうえ、本プロジェクトは、リンゴとアプリコット栽培、加工に関する書籍を編集することを計画中である。現時点では、専門家は、その内容及び編集方針を構想中である。</p>
2-2. The percentages of farmers in the pilot LSOs who apply the following technique in apple cultivation as per guidance by the Project reach to the indicated numbers (Percentages of farmers who apply these technique before the project start are 0%). <ul style="list-style-type: none"> ・ Disbudding and thinning fruits : 50% ・ Grafting : 50% (Recognition on the proper timings of cleft grafting, side grafting, and bud grafting are the main training targets.) 	<p>2015年4月に実施された中間調査の結果（中間調査の質問票は、付属資料7参照）によると、第3年次におけるもとのプロジェクト地域（コントロールグループを含む）の農家の割合は以下のとおりである。</p> <ul style="list-style-type: none"> ・ 摘芽及び摘果：23% ・ 接木：22%（日本人専門家の指導により割り接ぎ、切り接ぎを実践している農家） ・ 苗木生産：99%（若木を所有している農家のなかで若木に水やりを行っている農家） ・ 剪定：68%（剪定にのこぎりを使用している農家） ・ 殺虫剤の適用：6%〔BCL（忌避剤）を使用している農家〕 ・ 新しく導入された有機肥料の適用：6%（ボカシやMMLを使用している農家）

<ul style="list-style-type: none"> • Seeding production : 50% • Pruning : 50% • Pesticide application : 50 % (Introduction of organic pesticide) • Application of newly introduced organic fertilizer : 50%. <p>[プロジェクトで指導した栽培技術を農家が適用する (摘芽及び摘果 50%、接木 50%、苗木管理 50%、虫害防除 50%、有機肥料 50%)。]</p>										
<p>2-3. The number of farmers in the project site who record the amount of apple produced and sold is increased by 20%. (パイロット地域において、リンゴの生産量及び販売量を記録する農家が 20%増加する。)</p> <p>(Ratio of farmers recorded the amount of apple projection in the first year will be collected at the mid-term survey.)</p>	<p>2015 年 4 月から 5 月に実施された中間調査の結果から、生鮮リンゴの生産及び販売金額を記録していた農家数は 0 世帯であった。</p> <p>ベースライン調査 (第 1 年次) 及び中間調査 (第 3 年次) で得られたデータを比較のため示すと以下のようなになる。</p> <table border="1"> <thead> <tr> <th></th> <th>第 1 年次</th> <th>第 3 年次</th> </tr> </thead> <tbody> <tr> <td>生鮮リンゴの生産及び販売金額を記録していた農家数</td> <td>0 世帯</td> <td>0 世帯</td> </tr> </tbody> </table>		第 1 年次	第 3 年次	生鮮リンゴの生産及び販売金額を記録していた農家数	0 世帯	0 世帯			
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<p>2-4. The number of farmers who harvest, grade and pack for themselves is increased by 10%. (収穫、グレーディング、包装を農家自身で行う割合が 10%増加する。)</p> <p>(19% (49HHs) of farmers harvested for themselves and 9% (21HHs) of them graded for themselves in the first year.)</p> <p>(Ratio of farmers packed their apples in the first year will be collected at the mid-term survey.)</p>	<p>2015 年 4 月から 5 月に実施された中間調査の結果から、第 3 年次は、プロジェクト地域 (コントロールグループを含む) の 46% (122 世帯) の農家が彼ら自身で生鮮リンゴを収穫しており、43% (115 世帯) の農家が自身でグレーディング及び包装を行っている。</p> <p>ベースライン調査 (第 1 年次) 及び中間調査 (第 3 年次) で得られたデータを比較のため示すと以下のようなになる。</p> <table border="1"> <thead> <tr> <th></th> <th>第 1 年次</th> <th>第 3 年次</th> </tr> </thead> <tbody> <tr> <td>収 穫</td> <td>19% (49 世帯)</td> <td>46% (122 世帯)</td> </tr> <tr> <td>グレーディング及び包装</td> <td>9% (21 世帯)</td> <td>43% (115 世帯)</td> </tr> </tbody> </table>		第 1 年次	第 3 年次	収 穫	19% (49 世帯)	46% (122 世帯)	グレーディング及び包装	9% (21 世帯)	43% (115 世帯)
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<p>2-5. Marketing plan (including regional branding plan, etc.) for apple is developed focusing on sustainable farmers' income generation. (農家の持続的な収入のために新鮮リンゴに係るマーケティングプランが作成</p>	<p>2012 年の市場調査を基に生鮮リンゴの国内市場 (DCM) に向けたマーケティング戦略が提案され、それ以来マーケティング活動がその戦略に基づいて行われている。以下の戦略が提案されている。</p> <ul style="list-style-type: none"> - より改善された栽培技術/技能及び管理による高品質の生鮮リンゴの改善 - 収穫、グレーディング、包装の改善 									

される。)	<ul style="list-style-type: none"> - 主なメインターゲットは、国内市場（DCM）（主に卸売市場とする） これらに加えて、GB 地域における生鮮リンゴ生産の長期的戦略として、以下の活動が提案された。 - 日本人専門家による苗圃（nursery farms）への技術的支援 - 新たな品種の導入
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栽培、加工、マーケティングの各種マニュアルが整備され、生鮮リンゴ販売の DCM 向け戦略、長期マーケティング戦略も計画されたため、アウトプット 2 は、プロジェクト実施の中間時点である程度達成できている。しかしながら、有機殺虫剤及び施肥を実践したパイロット LSO の活動進捗は計画より遅れている。プロジェクトサイトにおいて生鮮リンゴの生産量及び販売量を記録した農家数は 0 のままである。本プロジェクトは今後、特に殺虫剤の適用、新たに導入された有機肥料の適用、接木といった技術普及及び実践に注力していく必要がある。

そのうえ、本プロジェクトは、プロジェクトサイトの農家が生鮮リンゴの生産金額及び販売金額を記録することを奨励する必要がある。加えて、生鮮リンゴの取引状況を記録することの利点及びその必要性を示す必要がある。

アウトプット 2 の記述及び指標の達成度合いから、アウトプット 2 は中間レビュー時点でかなりの程度で達成できているといえる。

3-3 プロジェクト目標

プロジェクト目標	Production and sales of high quality apricot products and apples are increased in the pilot areas. (パイロット地域において、高品質なアプリコット加工品とリンゴの生産量と販売量が増加する。)
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プロジェクト目標の指標の達成度合いを以下に示す。

指標	指標の達成状況						
<p>1. Total quantity of A-graded dried apricots which are produced by the farmers in the project sites (the sub-villages where the core farmer reside) is increased by 30%. (パイロット地域において、グレード A にグレードづけされたドライアプリコットの販売量が 30% 増加する。)</p> <p>(A-graded dried apricots will be determined every year based on the result of interviews with farmers and traders. Unit prices of A-graded dried apricot are 120 PKR/Kg for opened style and PKR180/Kg for Turkish Style and Guli in the first year.)</p>	<p>2015 年 4 月から 5 月に実施された中間調査の結果から、第 3 年次のグレード A にグレードづけされたドライアプリコットの販売量は 5,901kg であった(コントロールグループを含んだプロジェクト地域が対象)。</p> <p>ベースライン調査(第 1 年次)及び中間調査(第 3 年次)で得られたデータを比較のため示すと以下のようになる。</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>第 1 年次</th> <th>第 3 年次</th> </tr> </thead> <tbody> <tr> <td>グレード A にグレードづけされたドライアプリコットの販売量</td> <td style="text-align: center;">5,947 kg</td> <td style="text-align: center;">5,901 kg</td> </tr> </tbody> </table>		第 1 年次	第 3 年次	グレード A にグレードづけされたドライアプリコットの販売量	5,947 kg	5,901 kg
	第 1 年次	第 3 年次					
グレード A にグレードづけされたドライアプリコットの販売量	5,947 kg	5,901 kg					

<p>2. Total sales volume of apricot kernels, kernel products, apricot oil and oil products which are produced by the farmers in the pilot LSOs is increased by 30%. (パイロット地域におけるアプリコットカーネル、カーネル製品、アプリコットオイルの販売量が30%増加する。)</p> <p>(Total sales volume in PKR in the first year will be collected at the mid-term survey.)</p>	<p>2015年4月から5月に実施された中間調査の結果から、アプリコットカーネル、アプリコットオイルの販売量は以下になる（コントロールグループを含んだもともとのプロジェクト地域が対象）。</p> <ul style="list-style-type: none"> ・アプリコットカーネル：4,166 kg ・アプリコットオイル：25 l <p>農家がはかりを持っていないため、販売量は、かご、袋の数及び一つ当たりの重さを推定して計算した。</p> <p>ベースライン調査（第1年次）及び中間調査（第3年次）で得られたデータを比較のため示すと以下のようになる。</p> <table border="1"> <thead> <tr> <th></th> <th>第1年次</th> <th>第3年次</th> </tr> </thead> <tbody> <tr> <td>アプリコットカーネルの販売量</td> <td>4,483 kg</td> <td>4,166 kg</td> </tr> <tr> <td>アプリコットオイルの販売量</td> <td>0 l</td> <td>25 l</td> </tr> </tbody> </table>		第1年次	第3年次	アプリコットカーネルの販売量	4,483 kg	4,166 kg	アプリコットオイルの販売量	0 l	25 l
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アプリコットカーネルの販売量	4,483 kg	4,166 kg								
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<p>3. 80% of apples sold at Rawalpindi wholesale market through marketing research are graded S3 as average**. (卸売市場で販売される新鮮リンゴについて、平均してS3にグレードづけされた新鮮リンゴの割合が80%以上になる。)</p> <p>(Grade was S1 in the first year.)</p> <p>(** At least three wholesalers grade the apples and calculate the average. *Targeted figure “30 %” is to be reconsidered as of the mid-term review.</p>	<p>第3年次は、市場調査を通してラワールピンディの新鮮リンゴ卸売市場で販売されたグレードS3にグレードづけされた新鮮リンゴは76%であった。第1年次は、販売された新鮮リンゴは、S1にグレードづけされていた。</p> <p>ベースライン調査（第1年次）及び中間調査（第3年次）で得られたデータを比較のため示すと以下のようになる。</p> <table border="1"> <thead> <tr> <th></th> <th>第1年次</th> <th>第3年次</th> </tr> </thead> <tbody> <tr> <td>平均してS3にグレードづけされた新鮮リンゴの割合（%）</td> <td>0% (S1にグレードづけ)</td> <td>76%</td> </tr> </tbody> </table>		第1年次	第3年次	平均してS3にグレードづけされた新鮮リンゴの割合（%）	0% (S1にグレードづけ)	76%			
	第1年次	第3年次								
平均してS3にグレードづけされた新鮮リンゴの割合（%）	0% (S1にグレードづけ)	76%								

上記のプロジェクト目標の三つの指標の達成状況から、明確に達成された根拠となるデータがないため本プロジェクト終了時点のプロジェクト目標の達成について判断はできない。中間レビュー時点において、S3にグレードづけされラワールピンディ卸売市場で販売された新鮮リンゴの割合は76%に達したにもかかわらず、グレードAにグレードづけされたアプリコット、アプリコットカーネル、カーネル加工品、アプリコットオイルの合計販売金額には、改善の様子がみられないためである。

想定よりアプリコット加工に関する技術移転の機会が少なかったため、指標1の目標値は再検討する必要がある。

指標2については、高品質のアプリコットカーネル加工品を生産・輸出する本プロジェクトの方向性を明確に示す指標となるように再検討する必要がある。高品質のアプリコットカーネル加工品の輸出促進は、パイロット地域の農家の収入向上にもつながると思われる。

プロジェクト目標達成のためには、本プロジェクト及び農家にとっては、プロジェクト目標の

指標を達成するため2シーズンは加工を経験する必要があると思われる。そのため、プロジェクト実施期間終了までにパイロット地域の農家にとって十分な量のドライアプリコット及びアプリコットカーネル加工品を輸出するのは技術的に可能ではないかもしれない。現時点では、対象アプリコット品種のカーネル加工品が日本を含む第三国に輸出可能であるのかどうか検証するため、本プロジェクトは対象アプリコット品種のなかのカーネルナッツに含まれるアミグダリン量を検査している。

そのうえ、本プロジェクトは、農家に対して現場でドライアプリコット及びアプリコットカーネルの加工の直接指導を開始したところである。農家にとっては、2015年が専門家から直接指導された技術及び技能を活用してアプリコット及びアプリコットカーネルの収穫、グレーディング、加工を実践する初めての機会となる。

それらの指標の達成状況から、もしアプリコットカーネル、アプリコット加工品、アプリコットオイル、アプリコットオイル加工品の販売量が増加したなら、本プロジェクト終了時にプロジェクト目標は達成できるであろうと判断できる。

残り期間において、本プロジェクトは、ジャム、ジュース等の他の加工品を開発する意図があり、状況が許せば、付加価値づけに関する活動を継続していく予定である。

3-4 上位目標

上位目標	Production and marketing of apricot products and apples are improved in the project area. (GB 地域において、アプリコット加工品とリンゴの生産とマーケティング体制が改善される。)
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上位目標の指標の達成度合いを以下に示す。

指 標	指標の達成状況
Sale amount of dried apricots and apples in Hunza-Nagar district in 2016 is increased more than 15% in 2018.	2016年と2018年のドライアプリコット及び生鮮リンゴのフンザ・ナガル郡における実際の販売データはまだ入手できていない。

2016年と2018年のドライアプリコット及び生鮮リンゴのフンザ・ナガル郡における実際の販売データは入手できていない。現状では、上位目標の評価指標のデータが入手できないため、上位目標達成の見込みを判断するのは適切ではない。

農業局は、2015年5月に農業サーベイを実施しており、調査項目のなかにドライアプリコット及び生鮮リンゴ販売金額が含まれている。その結果は間もなく公表される予定である。農業局は、次回は2017年に同様の農業サーベイを実施する予定である²。本プロジェクトは、栽培、加工、マーケティングの技術及び知識を対象郡の他のLSOだけでなく、対象郡ではない郡の農業局職員及びLSOにも普及していく必要がある。

² 今回は、上位目標の指標の改訂は行っていない。そのため終了時評価では、2016年と2018年を2015年と2017年に読み替える必要がある。

第4章 実施プロセス

4-1 プロジェクト活動の進捗

2013年7月23日に発生したナンガ・パルパットの外国人殺害事件もあり、日本人専門家のGB地域への渡航が2013年7月初旬から2014年10月下旬の間禁止された。

渡航禁止措置の間、本プロジェクトは、プロジェクト活動をパキスタン国内の別の地域、日本、他国（タイ、トルコ、フランス）で行った。この渡航禁止措置のためにほとんどの活動の全体的進捗に遅れがみられ、果物加工の分野に最も遅れがみられた。

日本人専門家が、禁止措置のためにGB地域に不在の間、C/Pはプロジェクト活動を継続するように最大限の努力を行った。しかしながら、直接の技術協力の機会は双方の協議の結果、のちに行うこととなった。本邦研修や市場調査の復習セミナーには、日本人専門家の指導の下で農業局から210名、LSOから1,231名、民間企業から64名を含む合計1,505名の参加があり、研修の成果を共有した。

日本人専門家が、果樹作物の収穫期全体を通して現地に滞在した経験はまだないのが現状である。日本人専門家チームは、実際は2012年9月にGB地域においてプロジェクト活動を開始し、2013年7月に一時的に現地活動が中止となった。それによりアプリコットの収穫期になる7月から8月にかけて、特に現地での指導が必要となる加工分野に遅れがみられている。加工分野の日本人専門家は、現地でまだ直接技術指導に従事したことがなく、一方で、リンゴ栽培担当の専門家は、2012年にリンゴ栽培の指導を直接行っている。

日本の経験の蓄積を活用するために、日本側は、リンゴ栽培の本邦研修を2回（研修1：2014年6月29日～8月14日、研修2：2014年10月26日～12月6日）準備・実施し、アプリコットについては、1回（2014年7月21日～8月14日）本邦研修を行った。結果として、リンゴ栽培とアプリコット栽培において、技術移転の進捗に少し差異がみられている。

マーケティングとサプライチェーンマネジメントに関しては、本プロジェクトは、外国への輸出及びパキスタン国内における活動（イスラマバード及びラホール）双方に重点を置いている。その結果、本プロジェクトの支援により、Organo Botanicaが4.5トンのドライアプリコットを最終的に生産し、うち3トンがFar East Bazarという日本の輸出入業者を通して日本へ輸出された。

その他の分野に関しては、日本人専門家のGB地域での十分な期間とはいえない現地活動は、技術移転の有効性、効率性に負の影響を与えたと思われる。本プロジェクトは、第4年次においてこれらの進捗の遅れを取り戻す予定である。

4-2 実施体制

本プロジェクトは、農業局職員及び日本人専門家から構成されるPMU (Project Management Unit) が管理及び実施において役割を果たしており、LSOと農家も協働関係にある。本プロジェクトは、各対象LSOに2名の中核農家、1名の普及担当を配置している。彼らは、本プロジェクトにより導入された技術を他の農家及び他のLSOに普及するのに主導的な役割を期待されている。

JCCは、本プロジェクトの進捗、年間計画、PDMといった重要事項の議論、承認、決定及び、プロジェクトの進捗共有のため設立されている。JCCとプロジェクト管理ミーティング (Project Management Meeting : PMM) の開催リストは、付属資料8のとおり。

4-3 モニタリング

日本人専門家とC/Pは、プロジェクト活動の進捗、現状の問題点、懸案事項、今後のプロジェクトの計画について週定期会合（Weekly meeting）を行っている。本プロジェクトは民間企業も招いて、意思決定機関として、3回のJCCを開催している。2013年7月以降は、週定期会合の代わりにPMMを合計8回開催している。

本プロジェクトは、2015年4月には、四半期モニタリングシートを導入して、定期的かつ効果的なコミュニティレベルの活動（LSOの活動）をモニタリングすることとした。しかしながら、農業局と本プロジェクトからの早急なフィードバックのために改善の余地があると思われる。

4-4 コミュニケーション

本プロジェクトは、プロジェクトダイレクター、プロジェクトマネジャー、C/P、民間企業も招いて2012年10月9日、2013年4月22日、2014年10月30日に合計で3回のJCCを開催している。JCCにおいては、重要事項、PDMの改訂、プロジェクト活動の進捗について議論が行われた。

日本人専門家のGB地域の渡航禁止措置の間、本プロジェクトは、プロジェクトダイレクター、プロジェクトマネジャー、C/Pをイスラマバードやラホールに招いて、2013年8月から2014年12月の8回にわたりPMMを開催し、プロジェクトの進捗、実施すべき今後のプロジェクト活動について議論した。この渡航禁止措置の間も関係者間のコミュニケーションは維持されていたといえる。

現時点では、日本人専門家とパキスタン側のC/Pの間には深刻なコミュニケーション不足はみられていない。そのうえ、C/Pと本プロジェクトより雇用されたプロジェクト調整員は、日本人専門家と農業局及びLSOの間のコミュニケーションに大きな役割を果たしている。しかしながら、日本人専門家とC/Pの間の相互の合意を通じた意思決定のプロセスは再度確認する必要がある。

4-5 技術移転及び能力開発

LSO及び彼らのコミュニティレベルのネットワークを活用し、本プロジェクトは、各対象LSOに2名の中核農家、1名の普及農家を配置している。それにより、本プロジェクトにより得られた技術・知識が効果的・効率的に普及することにつながっている。加えて、本プロジェクトは、日本、トルコ、タイでの本邦研修、イスラマバード、ラホール、スワート、チトラルにおける市場調査・調査旅行の際には、復習セミナーを実施した。復習セミナーは、合計で17回プロジェクトにより開催され1,505名の参加があった。そのうち947名が男性であり、558名が女性であった（詳細情報は、付属資料10を参照）。そうすることにより、LSOは、自分のLSO傘下のVO（Village Organization）/WO（Women's Organization）に対して、プロジェクトの成果をVO/WOに所属するコミュニティのメンバーにも普及を推進することが期待されている。

セミナー、ワークショップ、海外研修、DCM市場調査を通してC/PとLSOに対する能力開発はある程度は効果的に行われている。C/Pはマーケティングの技術を、LSOは栽培技術（接木、剪定、収穫、施肥等）、基本的な加工技術、グレーディング、包装技術を獲得した。

4-6 民間企業との連携

民間セクターとの連携は本プロジェクト実施面の特徴の一つである。合計で 11 名の民間企業の経営者〔Chief Executive Officer (CEO) もしくはダイレクター〕が日本、タイ、トルコにおける海外研修に参加した。ラホールとイスラマバードの市場調査・調査旅行では、3 名の民間企業の CEO もしくはダイレクターが参加している。

そのうえ、本プロジェクトは、民間企業である ECI に中核農家に対する普及技術研修を委託して、フンザ・ナガール郡の職業技術研修センターの Zulfiqar Ali Ghazi 氏をコンサルタントとして契約し、ラホールにおける市場調査・調査旅行を 2014 年 11 月に実施した。彼はまた、アプリコット加工技術をパイロット地域の農家に指導する重要な役割を果たしている。一方、リンゴのトレーダーである Ajab Gull 氏は、リンゴのグレーディング、その方法の指導に大きな役割を果たし、2013 年 9 月、2014 年 9 月に農家に対して指導を行っている。現地の専門家による研修の詳細情報は、付属資料 9 を参照。

4-7 本プロジェクトに対するオーナーシップ

本プロジェクトの活動のおかげで、農業局職員及び対象 LSO は本プロジェクトに対するオーナーシップをもち始めている。農業局発行のプロジェクト年次報告によると、農業局と LSO は共同で、日本人専門家が GB 地域に不在の間、107 回のセミナー・研修を実施している。

一方、アリアバードの女性グループ〔LSO である GOLD (Golden Jubilee Organization for Local Development) の女性組織の一つ〕は、本プロジェクトから搾油機の供与を受けて、自らアプリコット搾油ビジネスを開始した。

第5章 レビュー結果

5-1 プロジェクトのレビュー

5-1-1 妥当性

本プロジェクトの妥当性は下記のとおり高い。

(1) パキスタンの開発計計画/戦略との整合性

農業セクターは、中心となる重要なセクターである。GDPの21.4%を占め、43%の労働力の雇用機会を提供し、輸出の60%を占めている（Vision 2025）。パキスタン政府は、Vision 2025を策定し、農業及び農業関連セクターの生産性、収益性、競争力、環境面の持続性を向上させることを意図している。具体的には、国内需要を満たすだけでなく輸出のための余剰を生産するために生産性の向上、自給自足農業から市場志向の農業への移行をしつつ付加価値づけに重点を置くものである（Annual Plan 2014-15, Ministry of Planning, Development & Reform）。

本プロジェクトは、生産性、収益性、競争力の向上を通してGB地域の高品質の果樹産品（アプリコット加工品及び生鮮リンゴ）の生産及び販売に焦点を置いていることから、高い整合性がある。多くのGB政府の関係者が、本プロジェクトは果樹産品の市場志向の付加価値づけに明確に焦点を当てていることから、GB政府の方向性とも合致していると明確に述べている。

(2) パキスタンに対する日本の援助政策との整合性

日本国外務省は、2012年4月に「対パキスタン・イスラム共和国 国別援助方針」を策定し、援助の基本方針（大目標）として、「経済成長を通じての安定した持続的な社会の構築」を掲げている。そのうえ、この大目標を達成するために①経済基盤の改善、②人間の安全保障の確保と社会基盤の改善、③国境地域などの安定・バランスのとれた発展を重点分野（中目標）としている。経済基盤の改善には、農業・農村開発、パキスタン経済の安定化及び国家の産業構造の多様化促進が含まれている。

本プロジェクトは、GB地域の中のパイロット地域の高品質のアプリコット加工品及び生鮮リンゴの生産及び販売に力を入れており、これは国別援助方針と合致している。そのことが、農業及び農村セクターの開発につながり、パキスタンの経済だけでなくGB地域の安定につながるであろうと考えられる。

(3) 本プロジェクトの必要性

対象地域であるGB地域は、パキスタン国内では、最も開発の遅れた地域として知られている。開発の道/恩恵に遅れをとる人々や地域を生み出しては、国の発展は見込めない。それゆえにパキスタンにとって、高品質のアプリコット加工品及び生鮮リンゴの生産及び販売の増加を通してこの地域の開発を推進することは大きな意味がある。

果樹産品のマーケティングに関しては、その品質は最も重要な要因であり、質の高い苗木の管理及び付加価値づけを向上させることは最も重要であり、本プロジェクトの目的はこの主旨にも合致している。GB地域の農家及びLSOにとっては、アプリコット加工品及

び生鮮リンゴを販売することにより彼らの収入の安定化につながり、本プロジェクトは、彼らのニーズにも合致しているといえる。

(4) 本プロジェクトのアプローチ

本プロジェクトは、果樹製品の付加価値づけの改善に焦点を当てるアプローチを採用している。このアプローチは、Vision 2025 で示されている付加価値づけ、生産性の改善、自給自足農業から市場志向の農業への移行といったパキスタンの開発の方向性とも合致している。

5-1-2 有効性

本プロジェクトの有効性はやや低いと判断される。

①アプリコット加工品の生産及びマーケティングの改善（アウトプット 1）及び②生鮮リンゴ加工品の生産及びマーケティングの改善（アウトプット 2）は、パイロット地域の高品質のアプリコット加工品と生鮮リンゴの生産及びマーケティングの改善（プロジェクト目標）に必要な不可欠な要素であるといえ、プロジェクト目標とアウトプット 1、2 の間の論理的関係は十分に説明できる。

「3-2 アウトプット」に記述されているとおり、プロジェクト目標の達成に関して中間レビュー時点でアウトプット 1 とアウトプット 2 の達成度は、それぞれ満足できるレベルには達している。

「3-3 プロジェクト目標」に記述されたとおり、グレード A にグレードづけされたアプリコット、アプリコットカーネル、カーネル加工品、アプリコットオイルの合計販売金額に改善がみられるなら、プロジェクト実施の中間点において、プロジェクト目標の達成が期待できる。

加えて、以下のようなプロジェクト目標達成に関する正の影響が観察されている。

[栽培技術]

- 剪定、摘果、ボカシを含む栽培技術は、中核農家からよく受け入れられている。

[アプリコットとリンゴのマーケティング]

- 本プロジェクトにより実施された市場調査マーケティング及び販売経験から、中央フンザの 20 名の生鮮リンゴ農家が、フンザリンゴ生産者協会（HAGA）³を組織した。協会は、本プロジェクトからの支援は何も受けずに、販売・マーケティング活動を行った。生鮮リンゴ用の段ボール箱の発注、生鮮リンゴのグレードづけ、包装を行う地元の女性を雇用し、イスラマバードの卸売市場へリンゴを運ぶためのトラックを手配した。
- HRSO の 5 名の農家は、生鮮リンゴをイスラマバードの卸売市場に集団出荷・販売することに成功した。本プロジェクトによる技術的な経験と知識に基づいて、彼らは生

³ 主に Baltit Rural Support Organization (BRSO) の農家、Hyderabad Rural Support Organization (HRSO) の農家を中心。今後、HAGAは会社として活動していく意向をもっている。2015年中の活動開始をめざしているとのこと。

鮮リンゴを彼ら自身でグレードづけし、包装した。販売金額は集団販売活動により、100%増加した。

- Rakaposhi Local Support Organization (RLSO) の農家たちは、ナガールのリンゴのトレーダーを通して Metro スーパーマーケットに合計で 2,000kg の生鮮リンゴの販売に成功した。
- 本プロジェクトの支援により、加工業者である Organo Botanica が 4.5 トンのドライアプリコットを最終的に調達し、うち 3 トンが Far East Bazar という日本の輸出入業者を通して日本へ輸出された。

[貢献要因]

- 農業局と対象 LSO の間の協働と協力

[阻害要因]

- 2013 年 7 月初旬から 2014 年 10 月下旬までの日本人専門家の GB 地域への渡航禁止
- 中央フンザ・ナガール地域におけるせん孔細菌病 (shot hole disease) の流行

[外部条件]

プロジェクト目標達成のための外部条件は、「農民にとっての果樹栽培の重要性が低下しない」「高付加価値果樹製品の市場条件が大幅に悪化しない」「果樹栽培に影響を与える自然災害が発生しない」「プロジェクトのステークホルダーがプロジェクトに協力する」である。

中間レビュー時点で、これらの外部条件は満たされている。GB 地域だけでなくプロジェクト地域にとって果樹栽培の重要性は高いままである。対象となる顧客が異なっているのでパキスタン産のものと国際市場向けのリンゴ製品の競合は発生しておらず、高付加価値果樹製品の市場状況は悪化していない。果樹栽培に影響を与える重篤な自然災害は発生していない。果物加工業者及びリンゴのトレーダーを含む本プロジェクトの関係者は、今後も本プロジェクトに対して必要な協力を行う意図を示している。

5-1-3 効率性

本プロジェクトの効率性は中程度である。

投入の質と量に関しては、日本人側の派遣が十分でなかったことを除けば、パキスタン側、日本側ともに C/P の配置、日本人専門家の派遣、機材の供与、海外研修、事務施設、設備の提供は比較的適切であったといえる。

投入のタイミングに関しては、ナンガ・パルパットの登山家殺人事件により 2013 年 7 月初旬から 2014 年 10 月下旬まで日本人専門家の GB 地域への渡航が禁止されたことから、いくつかのプロジェクト活動に遅れがみられた。特に、アプリコットの栽培、アプリコットの加工に関する現場での専門家による直接指導は 2015 年によりややく本格的に始まったばかりであり、このことが効率性を妨げる要因になっている。

日本人専門家が GB 地域に不在中には、農業局の支援で、対象 LSO と意欲的な中核農家が彼ら自身の予算で剪定、芽継ぎ、接木、ボカシ/肥料の生産といった多くのキャンペーン活動を実施した。しかしながら、専門家不在中の剪定、摘果、整枝といった栽培技術及び技能に関して

の農家の理解の度合いについては、技術的に確認する必要がある。

遅延した活動がみられているのにもかかわらず、プロジェクトの投入を活用したプロジェクト活動により、ある程度のアウトプットが達成されている。日本人専門家の指導で、農業局と対象 LSO が比較的円滑に本プロジェクトを運営している。しかしながら、アプリコット栽培の技術移転の機会がリンゴ栽培のそれよりも少なかったため、アウトプット 1 の達成度合いは、アウトプット 2 の達成度合いより低い。

そのうえ、本プロジェクトは、民間企業と連携しながら、プロジェクト活動を継続していく必要があり、民間企業の知見と経験を活用できるようにすることが効率性の改善につながるであろうと考えられる。

[貢献要因]

- 農業局、対象 LSO、中核農家間の協働と協力
- 本プロジェクトの成果を普及するのに注力している意欲的な中核農家及び LSO

[阻害要因]

- 2013 年 7 月初旬から 2014 年 10 月下旬までの日本人専門家の GB 地域への渡航禁止

[外部条件]

アウトプット達成のための外部条件は、「パイロット地域の農民が積極的にプロジェクトに参加する」「プロジェクトにより訓練された農業局職員が異動しない」である。

パイロット地域の農民は積極的にプロジェクトに参加している。対象 LSO の農家は、剪定、芽継ぎ、接木、ボカシ/肥料生産に関する多くのキャンペーン活動を行っている。しかしながら、2015 年 4 月にプロジェクトマネージャーと栽培（アプリコット）、栽培（リンゴ）、加工の 3 名の主要 C/P が Ghizer 郡及び Ghanche 郡に異動になった。人事異動の負の影響を緩和するために本プロジェクトは、本プロジェクトの経験及び知識を幅広く共有するように農業局の職員に働きかけていく必要がある。

5-1-4 インパクト

本プロジェクトのインパクトは現時点では判定できない。

中間レビュー時点では、「3-4 上位目標」に記述されたとおり、上位目標達成の見込みを判断するのは適切ではない。しかしながら、いくつかの正の影響がみられており、将来本プロジェクトによってもたらされる具体的なインパクトにつながる事が考えられる。

[栽培技術]

- パイロットサイトの農家は、ボカシをアプリコット及びリンゴだけでなくジャガイモのような換金作物に適用していることが分かった。その地域の農家の収入向上につながるという説明があった。
- 篤農家と中核農家は、他の農家へも普及を行う機会を得て、ギルギット郡の他農家に、新たに学んだ技術と知識を普及している。

[新たな農家団体設立の可能性]

- HAGA のメンバーの何人かは、近隣地域も巻き込んで協会を拡大する意図をもっている。加えて、2014 年 11 月の日本における上級マーケティングの研修の場において、フンザ・ナガール地域において果樹生産の農民団体を設立する提案が研修参加者からなされた。この農民団体設立の議論は 2014 年 12 月のイスラマバードにおいても継続され、そこで、農民団体を設立する旨の提案がなされた。団体設立の考えは、ほとんどすべての参加者から承認された。しかしながら、どのような形の団体にするか（作物別、地域別等）は、まだ議論の最中である。

[女性に対する正の影響]

- 何人かの女性は、本プロジェクト活動のおかげで現場でのビジネスやコミュニティーレベルの普及活動に精力的に従事していることが分かった。中核農家の主導により、アリアバードのある女性団体（GOLD の構成組織でもある Golden Jubilee Women's Organization）は、本プロジェクトから搾油機の供与を受けて、搾油ビジネスを開始した。
- 何人かの女性コミュニティメンバーたちは、中核農家から教えを受けて、女性組織を通じて肥料、ボカシの生産、剪定、摘果等を普及している。
- 何人かの女性農家は、コミュニティの男性と一緒にプロジェクトによって得られた技術及び技能の普及活動に熱心に従事している。
- プロジェクトの実施を通して、必要性に応じてであるが、女性関係者に対して平等に、研修機会をより多く提供している。延べ 2,541 名の農家の参加者のうち、女性は 1,180 名であり、355 名の農業局職員の参加者のうち、45 名が女性であった。

[外部条件]

- 上位目標達成のための外部条件は、「農民にとっての果樹栽培の重要性が低下しない」「プロジェクトにより訓練を受けた農業普及員が、移転された技術を農民に移転する」「高付加価値果樹製品の市場条件が大幅に悪化しない」「果樹栽培に影響を与える自然災害が発生しない」「農民にとっての果樹栽培の重要性が低下しない」である。
- これらの第 1、第 3、第 4 の外部条件は既に記述されたとおり満たされている。第 2 の外部条件「プロジェクトにより訓練を受けた農業普及員が、移転された技術を農民に移転する」は、中間レビューチームの視察結果からは満たされているといえる。

5-1-5 持続性

本プロジェクトの総合的な持続性は中程度であると期待できる。

(1) 政治面での持続性

市場志向の果樹製品の付加価値づけの受容及び推進は「5-1-1 妥当性」で記述されたとおり、パキスタンの開発計画と高い整合性を有しているため政治面での持続性は高い。

(2) 組織面での持続性

組織面の持続性は中程度である。農業局は、GB 地域で農業面での開発を担う唯一の組織である。しかしながら、2015年4月にプロジェクトマネジャーと栽培（アプリコット）、栽培（リンゴ）、加工の3名の主要C/Pが異動になり、組織面での持続性を低める結果になった。農業局は、組織面での持続性を確保するために本プロジェクトの経験及び知識を農業局内で幅広く共有する必要がある。LSOは農民組織を統合する存在として、Aga Khan Rural Support Programme Pakistan (AKRSP)により設立され、外部からの資金等の受け皿となっているが、今後も強化していく必要がある。

(3) 財政面での持続性

財政面での持続性は中程度である。パキスタン側はPC-1⁴予算の下でプロジェクトの運営費として997万6,550PKRを負担している。一方、日本側は運営費として1,670万円、現地通貨分で1,565万9,940PKRを負担している。残りの実施期間においても、パキスタン側はプロジェクト活動のための運営費を負担することが期待されている。パキスタン側のコーディネーターによると、パキスタン側は翌年の2015-16年度もほぼ同額の経費負担を行うとのことである。農業局は、将来のために開発予算(Annual Development Plan: ADP)を確保する必要がある。

しかしながら、中間レビューの現地調査結果から、いくつかのLSOは、運営費の不足に直面しているようである。農業局だけでなく本プロジェクトは、将来の経済活動実施のためにLSOに対して何らかの措置を講じる必要がある。本プロジェクトは、対象LSOに対して、収入創出活動のための活動計画を策定するように奨励していく必要がある。

(4) 技術面での持続性

技術面の持続性は、中程度である。パイロットLSOの農家たちは、本プロジェクトにより得られた新しい技術及び技能を海外研修、セミナー、日本人専門家の直接指導を通して受け入れている。中核農家たちは、現在、新しい技術及び技能を彼ら自身の圃場において実践しているところである。中核農家たちは、新しい技術と技能を近隣農家に普及するのに主導的な役割を果たしている。対象LSOの中核農家と普及員は、コミュニティのレベルにおいて、プロジェクトから得られた技能、技術、知識を普及することに専念している。いくつかの農家は、中核農家のパイロット農園で起こった利益及び利点を観察して、新たな技術及び技能を受け入れ始めている。

加えて、農業局の職員も本プロジェクトからの新しい技術及び技能を受け入れている。農業局は現在、県(district)をまたがった新しいプロジェクトを構想中であり、これは、本プロジェクトから得られた経験及び技術を基に、対象作物のマーケティング、生産、加工に注力するものである。これにより、本プロジェクトの利益が、フンザ・ナガール郡の他の非対象地域及びスカルドゥ郡を含むGB地域全体に広がることが期待される。

それに加えて、農業局にとっては、LSOの存在なしでは、適切に農業技術普及を行うの

⁴ プロジェクト開始にあたってPlanning Commissionから指定される標準形式のこと。プロジェクトを開始するにはどのようなプロジェクトでもPC-1書類を準備する必要がある。(出所：A Guide to Understanding the Budget in Pakistan, Dawood Ahmad, June 2007)

は難しい。農業局は、本プロジェクト終了後に農業普及のシステムを構築することを検討する必要がある。そのうえ、剪定、摘果、整枝といった栽培技術及び技能に関する農家の理解の度合いについて確認する必要がある。

農業局は、本プロジェクトの経験を、LSO をもたない他の郡にも再現していくことを検討する必要がある、本プロジェクトの成果が GB 地域全体に普及できることになる。

5-2 結 論

中核農家だけでなく農業局職員と対象 LSO の強いコミットメントのおかげで、プロジェクトの成果はますますのレベルの達成度に貢献している。しかしながら、日本人専門家の GB 地域の渡航禁止措置により遅れているいくつかの活動のために、プロジェクト目標の達成度は本プロジェクト終了時の想定よりも低くなっている。その結果、本プロジェクトは、高い妥当性、やや低い有効性、中程度の効率性の下で、ある程度プロジェクトの成果を産出している。この状況に対処するために、プロジェクト目標の達成には十分な実施期間を確保することが必要である。本中間レビューチームは、本プロジェクトの実施期間を延長することを提案する。

そのうえ、いくつかの指標は、現状に合致していないため改訂もしくは修正する必要がある。

残りの期間において、本プロジェクトは、民間セクターと連携しながら地域ブランドの構築及び LSO の能力開発を通して高品質のアプリコット加工品、マーケティングの推進に注力していく必要がある。

第6章 提言

6-1 プロジェクトのマネジメント

6-1-1 PDMの改訂

(すべての関係者に対して) 中間レビューの間、現行の PDM のアウトプット、プロジェクト目標、上位目標の論理関係を検証した結果、付属資料 11 のとおり PDM (Ver. 2) を PDM (Ver. 3) に改訂及び修正することを提言する。プロジェクト目標及びアウトプットの指標は、現状及び実際のプロジェクトの現状に合わせるために部分的に修正することを提言する。より詳細な修正点並びに改訂内容及び修正の具体理由は、付属資料 12 に示されている。

6-1-2 プロジェクト期間の延長

(すべての関係者に対して) 調査結果から、プロジェクト目標のアプリコット加工品に関する二つの指標を満たすためには、2 シーズンが必要であろうことが示されている。よって、本中間レビューチームは、本プロジェクトの実施期間を 2017 年 3 月まで延長することを提案する。

6-2 普及

6-2-1 本プロジェクトの成果の普及

- ① (農業局に対して) 農業普及に関しては、本中間レビューチームは、農業局と本プロジェクトは中核農家及びマスタートレーナーの役割及び提供サービスの範囲を明確にするように提言する。LSO は、栽培技術、加工技術、付加価値づけ、マーケティングの分野においてマスタートレーナーを各 1 名配置しており、村/住民組織 (VO/WO) のレベルで、1 名の中核農家を配置する。農業局は、LSO のマスタートレーナーに対して研修を行うことが期待される。
- ② (プロジェクトに対して) 本中間レビューチームは、農業局は郡をまたがるレベルで園芸開発のためのプラットフォームを策定するよう提言する。
- ③ (農業局に対して) 農業局次官の提案のとおり、より効果的な本プロジェクトの成果普及の促進につなげるために、本中間レビューチームは、農業局は対象郡ではない農業局職員及び対象ではない LSO を、プロジェクトサイトへの視察旅行を組織して一堂に会する機会を設けることを提言する。

6-3 コミュニケーション

6-3-1 農業局と対象 LSO の間の情報共有の促進

- ① (プロジェクト及び農業局に対して) LSO による栽培技術、加工、モニタリングといった農家間の活動進捗を共有するために、中間レビューチームは、農業局は LSO に対して、モニタリングシートの提出を促進していくことを提言する。結果として、農業局は、計画、加工、マーケティング、モニタリング、アドバイスの役割を果たすことが期待されている。
- ② (プロジェクト及び農業局に対して) 本中間レビューチームは、プロジェクトチーム及び農業局は、農家からの提案及び問題点を記載する欄を追加して本プロジェクトによっ

て開発された四半期モニタリングシートの改訂を検討することを提言する。プロジェクトチーム及び農業局は、農家からの声に迅速な対処を実行することが期待できる。

6-3-2 十分な議論に基づいた相互の同意

(プロジェクト及び農業局に対して) プロジェクト活動に参画することが期待されている加工業者は、民間業者が農家にも得られた利益を公正に配分する意図を有している姿勢を考慮して、プロジェクトと農業局の間の十分な議論に基づいた相互の同意の下に選定されるべきである。さらに、民間セクターから企業を選ぶ際は農家の意見もまた考慮する必要がある。

6-4 高付加価値化

(農業局に対して) 本中間レビューチームは、本プロジェクトは、ジャム加工、ジュース加工、菓子等といった潜在性のある加工品として他の付加価値活動を推進する必要があると提案する。残りの実施期間において、パイロット地域の農業局及び農家にとっては、他の高付加価値製品の可能性及び潜在性を示すことが効果的であるかもしれないからである。

6-5 技術面の提言

6-5-1 新しい技術及び技能に対する農家の理解の確認

(農業局に対して) 現地調査の結果、新しい技術及び技能の理解について農家にいくつかの混乱がみられたことから、本中間レビューチームは、農業局に対して農家のそれらの技術及び技能の理解を確認するように提言する。(例：アプリコットの硫黄燻蒸に対する理解)

6-5-2 新たな技術及び技能の十分な適切性

(農業局に対して) 本中間レビューチームは、アプリコットに係る摘果技術の適切性が十分であるかどうか確認する必要があると提言する。

6-5-3 土壌試験の必要性

(プロジェクトに対して) 土壌試験が GB 地域では実施されていない。そのため、農業局内の土壌試験室と協働で土壌試験を実施するように強く推奨する。

第7章 教訓

7-1 プロジェクト開始初期段階の関係者の意欲づけ

本プロジェクトにおいて、本邦研修を受講した中核農家は、LSO・コミュニティレベルの近隣農家へ技術及び技能の普及に指導的な役割を果たしている。本プロジェクトは、実施初期段階に中核農家に本邦研修機会を提供し、結果として、中核農家のプロジェクト活動に対する高い意欲をもたらす結果となった。プロジェクト実施初期段階に本邦研修の機会を提供することが、コミュニティのために働くことが期待されている中心的役割を担う人材に意欲づけをもたらす効果的であった。

7-2 政府とコミュニティを基礎とした組織間の協調及び協力

現状において、農業局は農業の新しい技術・技能をLSOのネットワークの活用・動員なしには、適切に普及ができないのが現状である。本プロジェクトにおいて、効果的なプロジェクトの成果の普及は、農業局と対象LSO間の協調及び協力によってもたらされている。具体的には、農業普及システムのなかでLSOをコミュニティのファシリテーターと位置づけることが、効果的な農業普及の結果をもたらしている。

7-3 民間セクターのアクター活用

民間セクターとの協調は、本プロジェクトの特徴の一つである。加工業者、トレーダー、コンサルタントといった民間セクターの関係者は、海外研修に参加し、市場調査に参加し、そして、農家へ研修を実施した。本プロジェクトは、民間セクターからの知識・経験を活用してきており、結果として、パイロット地域の何人かの農家は国内市場（DCM）及び国際市場へのアクセスを得ることに成功した。その他の農家は、実践的な加工技能及び基本的な農業普及の技能を身に付けた。市場開発やバリューチェーン開発に焦点を当てた技術協力プロジェクトにとって、民間セクターのアクターを活用したことが有用であったといえる。しかしながら、民間業者選定の際には、得られた利益を公正に農家と共有する民間企業の姿勢を第一に考慮しなければならない。

7-4 共同活動の開始のための情報共有

本プロジェクトが計画したパキスタンにおける市場調査の研修を通して、LSOは、彼らの商品価値及びマーケティング、マーケティングのシステムを理解するようになった。結果として、何人かの農家は、2014年に共同マーケティングを実践して交渉力を強化することに成功した。LSOにとっては、商品価値及び国内市場におけるマーケティングのシステムを知る機会を得たことが、交渉力及び合同マーケティングを強化することに成功したという点で意味があった。

付 属 資 料

1. 協議議事録（M/M：署名済み）
2. プロジェクトのPDM（Ver.2）
3. 日本側の投入
4. パキスタン側の投入
5. プロジェクト活動
6. 研修教材リスト
7. 中間調査の質問票
8. JCC及びプロジェクト管理ミーティングの一覧
9. プロジェクトサイトにおけるセミナー
10. 現地専門家による研修
11. 提案されたPDM（Ver.3）
12. PDMの改訂
13. 中間レビューミッション日程
14. 主要面談者リスト

**MINUTES OF MEETINGS
BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
AUTHORITIES CONCERNED OF
THE GOVERNMENT OF ISLAMIC REPUBLIC OF PAKISTAN
FOR
THE PROJECT FOR PROMOTION OF VALUE ADDED FRUIT PRODUCTS
IN GILGIT-BALTISTAN**

The Joint Mid-term Review Team (hereinafter referred to as “the Team”) organized by the Japan International Cooperation Agency (hereinafter referred to as “JICA”) headed by Mr. Mitsuyoshi Kawasaki, Chief Representative, JICA Pakistan, and Planning and Development Department of the Government of Gilgit-Baltistan headed by Mr. Muhammad Nazir Khan, Deputy Chief, monitored the activities and reviewed the achievements made so far in “the Project for promotion of value added fruit products in Gilgit-Baltistan” (hereinafter referred to as “the Project”) in Pakistan from June 10th, 2015 to June 26th, 2015.

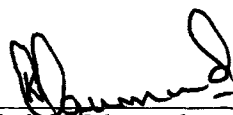
During its stay, the Team had a series of discussions and exchanged views on the Project with the government of Gilgit-Baltistan and Local Support Organizations (hereinafter referred to as “LSOs”), and the Joint Coordinating Committee (hereinafter referred to as “the JCC”) was held on 26th June, 2015.

As a result of the discussions, the Team submitted the mid-term review report as attached hereto and the Government of Gilgit-Baltistan agreed upon the description of the report.

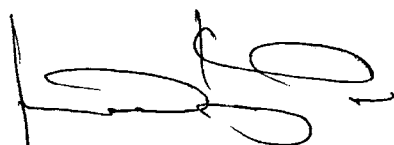
Gilgit, 26th June, 2015



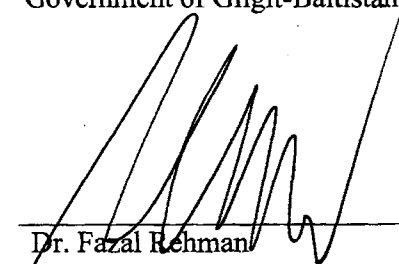
Mr. Mitsuyoshi Kawasaki
Japanese Leader of the Team
Chief Representative
Japan International Cooperation Agency
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Joint Mid-Term Review Report
for
The Project for Promotion of Value Added Fruit Products in
Gilgit-Baltistan In the Islamic Republic of Pakistan

Gilgit, 26th June, 2015

Japan International Cooperation Agency (JICA)

Planning and Development Department
Government of Gilgit-Baltistan

Department of Agriculture (DoA)
Government of Gilgit-Baltistan

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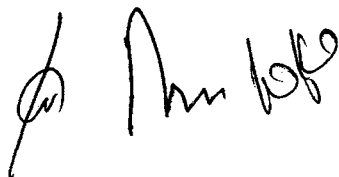
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Abbreviation and Acronym

ADP	Annual Development Plan
BRSO	Baltit Rural Support Organization
C/P	Counterpart
CEO	Chief Executive Officer
DC	Down County
DCM	Down County Market
DoA	Department of Agriculture, the Government of Gilgit-Baltistan
GB	Gilgit - Baltistan
GDP	Gross Domestic Product
GOLD	Golden Jubilee Organization for Local Development
HH	Household
HRSO	Hyderabad Rural Support Organization
JCC	Joint Coordination Committee
JICA	Japan Interactional Cooperation Agency
LSO	Local Support Organization
MM	Man/month
MML	Mountain Micrograms Liquid
P&D	Planning and Development Department, the Government of Gilgit-Baltistan
PDM	Project Design Matrix
PKR	Pakistani Rupee
PMM	Project Management Meeting
PMU	The Project Management Unit
PO	Plan of Operation
USD	US Dollar
VO	Village Organization
WO	Women's Organization

Chapter 1. Introduction

1.1. Background

In Gilgit-Baltistan that is located in the northern mountainous area of the Islamic Republic of Pakistan (“Pakistan”), GDP per capita is estimated to be about USD 600 (whereas it is USD 1,044 in the whole country of Pakistan) and 29% of the population is considered to be poor.

To deal with the above problems, Japan International Cooperation Agent (“JICA”) conducted a basic study to collect and verify the information on the horticulture sector in Gilgit-Baltistan (the “Basic Study”) for the period from December 2009 until May 2010. After that, JICA conducted a detailed planning survey (the “Survey”) for the period from June to July in 2011, for the purpose to clarify the problems related to the value chain of apricots, apples, cherries and their processed products, identify the fruit products of which problems can be dealt with and for which market demand is stable, and work out the cooperation plan that enables the community to construct a sustainable production system.

In response to the result of the Survey, in order for the farmers to stably and sustainably produce the high-value-added apricot processed product and apples, JICA agreed with the Pakistani government on the framework of the technical cooperation project of which goals are (i) for DoA to promote the cultivating and processing technologies, (ii) to construct the system for farmers to produce the high quality fruit products demanded by the market and sell them to private organizations and (iii) to construct the system for the private organizations to develop new sales channels.

Approaching the completion of the project in August 2016, JICA decided to conduct a mid-term review from June to July 2015 with the objectives of verifying and analyzing the achievement of project purpose and outputs, the implementation process, evaluating the Project in terms of five evaluation criteria and compiling a joint review report based on the survey results.

1.2. Project Overview

(1) Overall Goal

Production and marketing of apricot products and apples are improved in the project area.

(2) Project Purpose

Production and sales of high quality apricot products and apples are increased in the pilot areas.

(3) Output

Output 1. Production and marketing of apricot products are improved.

Output 2. Production and marketing of apples are improved.

(4) Project Period

August 22, 2012~August 21, 2016 (4 years)

1.3. Objectives of the Mid-Term Review

(1) To verify progress of project activities, achievement of outputs and implementation process along with the latest PDM and PO.

(2) To evaluate the Project in terms of relevance, effectiveness, efficiency, impact and sustainability based on JICA Guideline for Project Evaluation.

(3) Based on the evaluation results, to discuss challenges to the achievement of project purpose, consider the implementation strategy for the remaining period of the Project, and draw

lessons learned and recommendations on continuation of current project activities.

- (4) To compile the information collected in the form of a joint review report of the Project.
- (5) To revise and modify PDM in accordance to the results of the review in case of the necessity.

1.4. Schedule of the Mid-Term Review

The Mid-term review was conducted from 10 June to 2 July, 2015. The schedule is attached as Annex 1.

1.5. Members of the Mid-Term Review Team

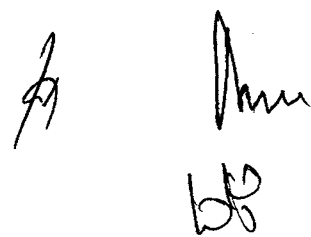
Members of the Mid-term review Team, nine (9) members in total consists of Japanese and Pakistan Team. Members of each side are shown in the tables below.

[Japanese side]

Name	Role	Title
Mr. Mitsuyoshi KAWASAKI	Leader	Chief Representative , JICA Pakistan Office, JICA
Dr. Shigemochi HIRASHIMA	Agricultural economics	Visiting Senior Advisor, JICA
Dr. Naoto WATANABE	Processing of agricultural products	Agricultural Development Consultant, Agri Energy International Co., Ltd.
Mr. Satoshi HAMANO	Cooperation Planning I	Representative , JICA Pakistan Office, JICA
Mr. Amir Abbas Bukhari	Cooperation Planning II	Senior Programme Officer, JICA Pakistan Office, JICA
Mr. Akira OGASAWARA	Evaluation and Analysis	Consultant, VSOC Co., Ltd.

[Pakistani side]

Name	Role	Title
Mr. Muhammad Nazir Khan	Leader	Deputy Chief, Planning and Development Dept. the Government of Gilgit-Baltistan
Mr. Ghulam Mustafa	Deputy Leader	Deputy Director Projects, DoA, the Government of Gilgit-Baltistan
Mr. Javed Akhtar	Focal Person	Deputy Director, DoA, the Government of Gilgit-Baltistan



Chapter 2. Method of Review

2.1. Framework of the Mid-Term Review

The Mid-term review team followed “JICA Guidelines for Project Evaluation (2010)” as a basis for conducting the Mid-term review. The performance of the Project was assessed based on the latest PDM-1 (ver.2) adopted on October 30, 2014 (see Annex 2).

2.2. Steps of the Mid-Term Review

- (1) Collect data/information on project activities on fruit cultivations techniques of fruits (apricot and apple), extension system, community organizations (LSOs) and marketing of fruits in the GB region and/ or Pakistan through interview, questionnaire and field survey.
- (2) Collect data/information on the current achievement and implementation process of the Project through interview, questionnaire and field survey.
- (3) Analyze data/information collected so as to formulate a joint mid-term review report.
- (4) Draw lessons learned and recommendations for the remaining period of the Project.

Table 2-1: Definition of the Five Evaluation Criteria

1) Relevance	Relevance is reviewed and justified by the project purpose and the overall goal in connection with the needs of the beneficiaries, policies of the Government of Pakistan and appropriateness of strategy or measures.
2) Effectiveness	Effectiveness is assessed by evaluating the effect to which the Project has achieved and contributed to the beneficiaries.
3) Efficiency	Efficiency is analyzed focusing on the relationship between the output and input/activities in terms of timing, quality and quantity.
4) Impact	Impact is identified and/or forecasted by referring to direct and indirect, positive and negative impacts caused by the Project.
5) Sustainability	Sustainability is assessed in political/institutional, organizational, financial and technical aspects by examining the extent to which the achievement of the Project will be sustained and/or expanded after the Project is completed.

Chapter 3. Project Achievement

3.1. Inputs

3.1.1. Japanese Side

(1) Dispatch of Experts

A total of 13 experts with a total of 76.19 MM in specific expertise which includes team leader, extension system, sub leader, marketing, fruit cultivation (apricot), fruit cultivation (apple), pest and disease control, fruit processing, supply chain management, third country training and coordinator have been dispatched. The list of the experts and its dispatch period is shown in “1. Dispatch of Japanese Experts” in Annex 3.

(2) Provision of Equipment

Equipment was provided for day-to-day project activities, which amounted to 2,422,939 JPY in total. integrated printer (copier), refrigerator/freezer, projector, video camera, laptop PC, color laserjet printer, 4 in 1 B/W printer, generator, brixmeter, acidmeter, apricot oil extractor, motorbike and sprayer were provided. The items of equipment are shown in “2. List of Equipment,” in Annex 3. There is no equipment that have not utilized.

(3) Operational Cost

The Japanese side allocated local operational cost for the implementation of the Project activities. The total amount of operational cost borne by Japanese side was 16,700,000 JPY as summarized in “3. Operational Cost Sharing,” in Annex 3.

(4) Overseas Trainings in Japan

A total of 85 Pakistani C/Ps from DoA, farmers/LSO, private firm were selected to participate in overseas trainings in Japan, Turkey, Thailand and France. They learned basic experience cultivation techniques and processing and marketing. The stakeholders who participated in the training are listed in “4. Training in Japan and other Countries,” in Annex 3.

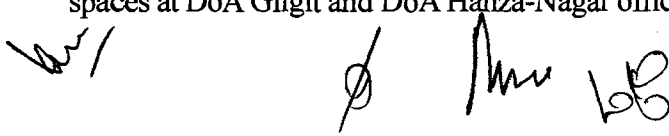
3.1.2. Pakistani Side

(1) Appointment of Counterpart Personnel

A total of 18 Pakistani C/Ps in project director, project manager, project coordinator, extension, marketing, fruit cultivation, fruit processing and extension have been assigned for the Project activities as shown in “1. Assignment of Pakistani C/P,” Annex 4. Currently, 14 Pakistani C/Ps in total as are assigned for the Project activities.

(2) Provision of Facility

Facility and equipment provided by the Pakistani side was some clerical facilities and clerical spaces at DoA Gilgit and DoA Hanza-Nagar offices for the project activities.

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(3) Operational Cost Sharing

DoA shared 15,486,000 PKR for project activities (establishment charges, strengthening of food processing centre, cost of durable goods and operational budget) in 2012 July to 2015 June. Operational cost that the Pakistani side shares for direct operation of the Project was 9,976,550 PKR, which is the sum of the cost of durable goods and operational budget. The further detail amount of operational cost borne by the Pakistani side is summarized in "2. Operational Cost Sharing," in Annex 4.

3.2. Output

The progress of project activities for outputs is described in Annex 5. In addition to that, training materials that project developed is listed in Annex 6.

3.2.1. Output 1

Output 1	Production and marketing of apricot products are improved.
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The fulfillment of indicators for Output 1 is shown below.

Indicators	Fulfillment of Indicators
Indicator 1-1. Manuals for cultivation, processing and marketing	<p>The Project is formulating manuals for cultivation, processing and marketing based on project activities. As of the mid-term review, the following topics and contents would be included:</p> <ul style="list-style-type: none"> - Fruit Thinning (Apricot) - Organic Insect Repellent - Bio-Insecticide (Apricot) - Compost(Apricot) - Grafting and Budding(Apricot) - Mountain Micro-Organism Liquid (MML) (Apricot) - Lime sulfur mix and Bordeaux mix (Apricot) - Pruning(Apricot) - Dried Organic Apricot Method - Apricot Drying Brochure - Dry Apricot Processing - Kernel nuts Grading - Brochure of Apricot Oil Extraction - Overview of Market in DC - Overview of Markets for Apricot 2013 <p>Furthermore, the Project has a plan to formulate guidebook on apple and apricot cultivation and processing by the time of project termination. Currently, experts are conceptualizing its contents and editing strategy.</p>
Indicator 1-2. The percentages of farmers in the pilot LSOs who apply the following technique in apricot cultivation and processing as per guidance by the Project reach to the indicated numbers (percentages of farmers who apply these techniques before the project start are 0%). • Root stock management (50%)	<p>According to the result of the mid-term study conducted by the Project in April 2015 (Questionnaire is shown in Annex 7), the percentage of farmers in the original project areas (including control groups) in the 3rd year were as follows:</p> <ul style="list-style-type: none"> • Rootstock management :99% (those who provide water to young trees among those who have young trees)• • Grafting :16% (those who conduct cleft grafting, side grafting according to the guidance of Japanese experts) • Pruning :45% (those who use saw for pruning)

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<ul style="list-style-type: none"> • Grafting (50%) • Pruning (50%) • Pesticide application (50%) • Fertilization (50%) • Processing (50%) 	<ul style="list-style-type: none"> • Pesticide application: 2% (those who use BCL) • Application of newly introduced organic fertilizer :1% (those who use Bokashi and/or MML) • Harvesting 25% (those who use trampolin for harvesting) • Processing1 49% (those who wash fresh apricot before drying it) • Processing2 79% (those who wash hands before you cut fresh apricots) • Processing3 7% (those who use knife when cutting fresh apricots) • Processing4 17% (those who grade by level of maturity and/or damage)
<p>1-3. Marketing plan (including regional branding plan, etc.) for apricot products is developed focusing on sustainable farmers' income generation.</p>	<p>The draft of marketing and brand strategies of apricot products in the Project areas for the DC and international markets were formulated during the advanced marketing training in Japan conducted in November 2014, and presented in the seminar in December 2014. The strategy in the DC was developed to increase the market share and to propose high quality and unique taste as position products. In concrete, the implementation strategy is designed to focuses on high quality products, maintains high price, targets wholesaler and distributors (who in turn supply to) high-end market) and promotes products in exhibition and direct sales to distributors.</p> <p>On the other hand, the international marketing strategy was proposed (i) to target mainly young women concerned about beauty who perceive that beauty is enhanced by natural, organic and healthy diet and who are from middle and higher income groups and (ii) to identify apricot products as position products in exclusive health stores in upscale department stores.</p>

Output 1 has been produced to some extent in the middle of the project implementation since manuals for cultivation, processing and marketing are being developed and the international marketing strategy as well as the draft of marketing and brand strategies of apricot products in the Project areas for the DC and international markets was formulated. However, the progress of activities in the pilot LSOs who apply some apricot cultivation and processing techniques introduced by the Project were behind the schedule due to the ban of Japanese experts' entry in the project area as of the mid-term review. The Project will need to focus on extension of techniques and their application, in particular, pesticide application, application of newly introduced organic fertilizers and using knife for cutting fresh apricots.

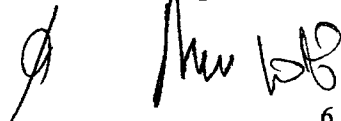
The target figures described in the indicator 1-2 need to be reconsidered due to less opportunities of technology transfer than expected on apricot cultivation and fruit processing.

According to the brief description on Output 1 as stated above and the fulfillment of indicators, Output 1 has been produced to some extent at the time of the mid-term review.

3.2.2. Output 2

Output 2	Production and marketing of apples are improved.
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The fulfillment of indicators for Output 2 is shown below.



Indicators	Fulfillment of Indicators						
<p>2-1. Making manuals for cultivation, processing and marketing.</p>	<p>The Project is formulating manuals for cultivation, processing and marketing based on project activities. As of the mid-term review, the following topics and contents would be included:</p> <ul style="list-style-type: none"> - Fruit Thinning (Apple) - Apple Cultivation Calendar - Organic Insect Repellent - Bio-Insecticide (Apple) - Compost (Apple) - Grafting and Budding (Apple) - Mountain Micro-Organism Liquid (MML)(Apple) - Lime sulfur mix and Bordeaux mix (Apple) - Pruning (Apple) <p>Furthermore, the Project has a plan to formulate guidebook on apple and apricot cultivation and processing by the time of project termination. Currently, experts are conceptualizing its contents and editing strategy.</p>						
<p>2-2. The percentages of farmers in the pilot LSOs who apply the following technique in apple cultivation as per guidance by the Project reach to the indicated numbers (Percentages of farmers who apply these technique before the project start are 0%).</p> <ul style="list-style-type: none"> • Disbudding and thinning fruits :50% • Grafting :50% (Recognition on the proper timings of cleft grafting, side grafting, and bud grafting are the main training targets.) • Seeding production :50% • Pruning :50% • Pesticide application :50% (Introduction of organic pesticide) • Application of newly introduced organic fertilizer :50%. 	<p>According to the result of the mid-term study conducted by the Project in April 2015 (Questionnaire is shown in Annex 7), the percentage of farmers in the original project areas (including control groups) in the 3rd year were as follows:</p> <ul style="list-style-type: none"> • Disbudding and thinning fruits :23% • Grafting :22% (those who conduct cleft grafting, side grafting according to the guidance of Japanese experts) • Seeding production :99% (those who provide water to young trees among those who have young trees) • Pruning :68% (those who use saw for pruning) • Pesticide application :6% (those who use BCL) • Application of newly introduced organic fertilizer: 6% (those who use Bokashi and/or MML) 						
<p>2-3. The number of farmers in the project site who record the amount of apple produced and sold is increased by 20%. (Ratio of farmers recorded the amount of apple projection in the first year will be collected at the mid-term survey.)</p>	<p>As of the mid-term study conducted by the Project in April to May 2015, the number of farmers in the project site who record the amount of apple produced and sold is 0 household.</p> <p>Data obtained in baseline survey (1st year) and the mid-term study (3rd year) is summarized below for comparison.</p> <table border="1"> <thead> <tr> <th></th> <th>1st year</th> <th>3rd year</th> </tr> </thead> <tbody> <tr> <td>The number of farmers in the project site who record the amount of apple produced and sold</td> <td>0 HHs</td> <td>0 HHs</td> </tr> </tbody> </table>		1 st year	3 rd year	The number of farmers in the project site who record the amount of apple produced and sold	0 HHs	0 HHs
	1 st year	3 rd year					
The number of farmers in the project site who record the amount of apple produced and sold	0 HHs	0 HHs					
<p>2-4. The number of farmers who</p>	<p>As of the mid-term study conducted by the Project in</p>						

but
Mr. Lot 7

<p>harvest, grade and pack for themselves is increased by 10%. (19 % (49HHs) of farmers harvested for themselves and 9% (21HHs) of them graded for themselves in the first year.) (Ratio of farmers packed their apples in the first year will be collected at the mid-term survey.)</p>	<p>April to May 2015, 46% (122HHs) of farmers in the original project areas (including control groups) harvested apples by themselves and 43% (115 HHHs) of them graded apples by themselves in the 3rd year.</p> <p>Data obtained in baseline survey (1st year) and the mid-term study (3rd year) is summarized below for comparison.</p> <table border="1"> <thead> <tr> <th></th> <th>1st year</th> <th>3rd year</th> </tr> </thead> <tbody> <tr> <td>Harvesting</td> <td>19 % (49HHs)</td> <td>46% (122HHs)</td> </tr> <tr> <td>Grading and packing</td> <td>9% (21HHs)</td> <td>43% (115 HHHs)</td> </tr> </tbody> </table> <p>In 2014, seven (7) HHHs out of the 115 HHHs who graded apples by themselves succeeded in collectively selling apples.</p>		1 st year	3 rd year	Harvesting	19 % (49HHs)	46% (122HHs)	Grading and packing	9% (21HHs)	43% (115 HHHs)
	1 st year	3 rd year								
Harvesting	19 % (49HHs)	46% (122HHs)								
Grading and packing	9% (21HHs)	43% (115 HHHs)								
<p>2-5. Marketing plan (including regional branding plan, etc.) for apple is developed focusing on sustainable farmers' income generation.</p>	<p>The marketing strategies of apple for DCM was proposed based on the market research in 2012, and marketing activities have been done based on these strategies since then. The following marketing strategy were proposed:</p> <ul style="list-style-type: none"> - improve quality of apples by better cultivation technique/skill and better attention, - improve harvesting, grading, and packaging - main target market DCM (mainly wholesale market). <p>In addition to those, as longer term strategy for apple production in the GB region. the following activities were suggested:</p> <ul style="list-style-type: none"> - Technical assistance on nursery farms by JICA experts. - Introduction of new variety 									

Output 2 has been produced to some extent in the middle of the project implementation since manuals for cultivation, processing and marketing are being developed and the marketing strategies for DCM and longer term strategy for apple marketing in Hunza-Nagar district were formulated. However, the progress of activities in the pilot LSOs who apply organic pesticide and fertilizer application for apple introduced by the Project were behind the schedule as of the mid-term review. The number of farmers in the project site who record the amount of apple produced and sold is 0 HHHs. The Project will need to focus on extension of techniques and their application, in particular, pesticide application, application of newly introduced organic fertilizers and grafting.

Furthermore, the Project need to take some measures so that farmers in the project site can be encouraged to record the amount of apple produced and sold. As of the mid-term review, it is necessary to demonstrate the possible advantage and its necessity of recording their transactions of apples.

According to the brief description on Output 2 as stated above and the fulfillment of indicators, Output 2 has been produced significantly at the time of the mid-term review.

3.3 Project Purpose

Project purpose	Production and sales of high quality apricot products and apples are increased in the pilot areas.
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The fulfillment of indicators for the project purpose is shown below.

Indicator	Fulfillment of Indicator									
<p>1. Total quantity of A-graded dried apricots which are produced by the farmers in the project sites (the sub-villages where the core farmer reside) is increased by 30%. (A-graded dried apricots will be determined every year based on the result of interviews with farmers and traders. Unit prices of A-graded dried apricot are 120 PKR/Kg for opened style and PKR180/Kg for Turkish Style and Guli in the first year.)</p>	<p>As of the mid-term study conducted by the Project in April to May 2015, total sales volume of A grade dried apricots was 5,901kg. in the 3rd year (for the original project areas including control groups) Data obtained in baseline survey (1st year) and the mid-term study (3rd year) is summarized below for comparison.</p> <table border="1"> <thead> <tr> <th></th> <th>1st year</th> <th>3rd year</th> </tr> </thead> <tbody> <tr> <td>The total quantities of A-grade</td> <td>5,947 kg</td> <td>5,901 kg</td> </tr> </tbody> </table>		1 st year	3 rd year	The total quantities of A-grade	5,947 kg	5,901 kg			
	1 st year	3 rd year								
The total quantities of A-grade	5,947 kg	5,901 kg								
<p>2. Total sales volume of apricot kernels, kernel products, apricot oil and oil products which are produced by the farmers in the pilot LSOs is increased by 30%. (Total sales volume in PKR in the first year will be collected at the mid-term survey.)</p>	<p>As of the mid-term study conducted by the Project in April to May 2015, total sales volume of apricot kernels, kernel products, apricot oil and oil products are as follows: Apricot kernel: 4,166 kg Apricot oil: 25 liter (for the original project areas including control groups) Total sales volume of apricot kernels, kernel products, apricot oil and oil products were estimated based on estimated numbers and weight of basket and bags by farmers or field researchers since farmers do not possess balances. Data obtained in baseline survey (1st year) and the mid-term study (3rd year) is summarized below for comparison.</p> <table border="1"> <thead> <tr> <th></th> <th>1st year</th> <th>3rd year</th> </tr> </thead> <tbody> <tr> <td>Apricot kernel</td> <td>4,483 kg</td> <td>4,166 kg</td> </tr> <tr> <td>Apricot oil</td> <td>0 liters</td> <td>25 liters</td> </tr> </tbody> </table>		1 st year	3 rd year	Apricot kernel	4,483 kg	4,166 kg	Apricot oil	0 liters	25 liters
	1 st year	3 rd year								
Apricot kernel	4,483 kg	4,166 kg								
Apricot oil	0 liters	25 liters								
<p>3. 80% of apples sold at Rawalpindi wholesale market through marketing research are graded S3 as average**. (Grade was S1 in the first year.) (** At least three wholesalers grade the apples and calculate the average. *Targeted figure "30%" is to be reconsidered as of the mid-term review.</p>	<p>In the third year, 76% of apples sold at Rawalpindi wholesale market through marketing research are graded S3. Apples sold were graded as S1 in the first year. Data obtained in baseline survey (1st year) and the mid-term study (3rd year) is summarized below for comparison.</p> <table border="1"> <thead> <tr> <th></th> <th>1st year</th> <th>3rd year</th> </tr> </thead> <tbody> <tr> <td>% of apples graded as S3 on average</td> <td>0 % (Graded as S1)</td> <td>76 %</td> </tr> </tbody> </table>		1 st year	3 rd year	% of apples graded as S3 on average	0 % (Graded as S1)	76 %			
	1 st year	3 rd year								
% of apples graded as S3 on average	0 % (Graded as S1)	76 %								

According to the fulfillment of the three (3) indicators above for the project purpose, there is no obvious evidence to judge the achievement of the project purpose at the end of the Project. At the time of the mid-term review, there is no positive change observed in total sales of A-graded apricot, apricot kernels, kernel products, and apricot oil even though percentage of apples graded as S3 sold at Rawalpindi wholesale market through marketing research are 76%.

The target figure described in the indicator 1 needs to be reconsidered due to less opportunities

of technology transfer than expected on apricot processing.

The indicator 2 needs to be reconsidered as the one which obviously represents the direction of the Project which intends to produce and export quality apricot kernel products. Encouragement of quality apricot kernel products export would also lead to increased farmers' income in the pilot areas.

So as to achieve the project purpose, it may not be technically possible for farmers in the pilot areas to produce sufficient amount of quality dry apricot and apricot kernel products for export until the termination of the Project since two (2) processing seasons would be necessary for the farmers and the Project to actually satisfy the indicators for the project purpose. Currently, the Project is examining the amygdaline contents of kernel nuts in target apricot varieties to ensure that their kernel products can be exported to overseas countries including Japan.

Furthermore, the Project has started to provide direct technical assistance in processing apricot and apricot kernels to farmers in the field. Farmers will need to practice harvesting, grading, and processing apricot and apricot kernels with the techniques and skills introduced by the expert for the first time in 2015. Therefore, it is necessary to consider the extension of project period so as to ensure the sufficient opportunities of technical transfer between the Japanese experts, DoA and farmers in the pilot areas.

According to the fulfillment of indicators, it is judged that the project purpose would be achieved at the end of the Project if there is positive change in total sales of A-graded apricot, apricot kernels, kernel products, and apricot oil.

In the remaining period, the Project has an intention to develop other processed products such as jam and juice, etc. and continue activities regarding value addition if the situation allows.

3.4 Overall Goal

Overall Goal	Production and marketing of apricot products and apples are improved in the project area.
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The fulfillment of indicators for the overall goal is shown below.

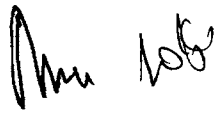

Indicator	Fulfillment of Indicator
Sale amount of dried apricots and apples in Hunza-Nagar district in 2016 is increased more than 15% in 2018.	There is no actual data on sales amount of dried apricots and apples in Hunza-Nagar district in 2016 and 2018 yet.

There is no actual data on sales amount of dried apricots and apples in Hunza-Nagar district in 2016 and 2018. Currently, it is not appropriate now to determine the prospective of direction of achievement of overall goal of the Project since there is not practical data available for the indicator of the overall goal.

DoA conducted the agricultural survey in May 2015, which includes sales value of dried apricots and apples as a part of survey items. The results of the survey will be published soon. DoA will conduct agricultural statistical surveys in 2017.

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The Project and DoA will need to disseminate new cultivation techniques and skills to the other LSOs in the target districts as well as the other DoA officers in non-target districts.



Chapter 4 Implementation Process

4.1. Progress of Activities

The Japanese expert team was banned visiting of Japanese experts to GB region in the beginning of July 2013 to the beginning of October 2014 due to a massacre occurred at Nanga Parbat on June 23, 2013.

During the banned period, the Project implemented project activities in the other areas in Pakistan, Japan and the other countries. General progress of almost of the project activities have been delayed due to the ban, in particular, activities in the fruit processing field were delayed the most.

During the absence period of Japanese experts in the GB region due to the ban, C/Ps tried their best to continue the project activities, however, direct technical transfer of apricot cultivation and processing have been thrown forwarded by mutual consultations. A total of 209 DoA officials, 1,385 LSO members, 60 officers from private firms and 1,654 farmers has participated in return seminars to share the results of training with the guidance of the Japanese experts.

The Japanese expert team has not stayed the whole one harvesting season for apricot in the GB region yet. The team started project activities in the GB region in September 2012 and temporally terminated activities in June 2013, which delayed progress in the field of fruit processing which is necessary to be intensively conducted during the apricot harvest season in July and August in Hunza-Nagar area. The Japanese expert in fruit cultivation of apricot has not been directly involved with fruit cultivation in the field, on the other hand, the Japanese expert in charge of apple cultivation were involved with apple cultivation once in 2012.

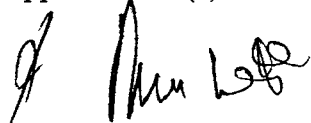
Utilizing the accumulated experience in Japan, the Japanese side organized and implemented the overseas training on apple cultivation twice (apple cultivation-1 in June 29, 2014 to August 14, 2014 and apple cultivation-2 in October 26, 2014 to December 6, 2014) and apricot cultivation once (apricot cultivation in July 21, 2014 to August 14), consequently, there would be slight difference in progress of technology transfer in cultivation skills between apricot and apple.

As with the field of marketing and supply chain management, the Project put stress on export products to foreign countries and marketing activities in Pakistan (Lahore and Islamabad) in collaboration with private firms. As a result, with the assistance of the Project, Organo Botanica finally procured 4.5 tons of dried apricots, 3.0 tons of which were exported to Japan through Far East Bazar, a Japanese trade company mainly deal in products from the foreign countries.

Even in the other field of activities, not sufficient field experiences of the JICA experts in the GB region might negatively affect efficiency and effectiveness of technology transfer. The Project is going catch up the delay in the 4th implementation year.

4.2. Implementation structure

The Project Management Unit (PMU) that consists of DoA officers and JICA experts plays a leading role in managing and implementing project activities in collaboration with LSOs and farmers. The Project appoints two (2) core farmers and at least one (1) extension personnel for



each target LSO. They are expected to play a leading role in disseminating technologies introduced by the Project to other farmers within target LSO as well as to other LSOs.

Joint Coordinating Committee (JCC) are established to discuss, approves and decides the important issues of the Project such as progress report, annual work plan and PDM and to share the progress of the Project. JCC and PMM are listed in Annex 8.

4.3. Monitoring

Japanese experts and C/Ps have regular weekly meeting to share the progress of project activities and discuss the current challenges, issues and the future plan in case Japanese experts are delegated in Pakistan. As the decision-making body, the Project held a total of three (3) JCCs, inviting key personnel from private firms. After June 2013, the Project managed its activities through a total of eight (8) project management meetings (PMMs) instead of weekly meeting.

In April 2015, the Project developed quarterly monitoring sheet for project activities at the community level for periodical and effective monitoring. However, it may need to be modified for prompt feedback from DoA and the Project.

4.4. Communication

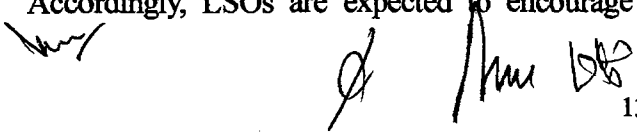
The Project held a total of three (3) JCCs in October 9, 2012; April 22, 2013; and October 30 2014, inviting private firms as well as Project Director, Project Manager, C/Ps, where they decided to discuss, revise PDM, and share the progress of project activities.

During the ban on visiting of Japanese experts to the GB region, the Project held eight (8) Project Management Meetings in August 2013 to December 2014, inviting Project Manager, Project Coordinator and other C/Ps in Islamabad or Lahore so as to share the progress of the Project and discuss activities to be implemented and in the future. The Project maintained communication among stakeholders of the Project during the ban.

There are no serious problems in communication between Japanese experts and Pakistani C/Ps. Furthermore, C/Ps and the project coordinator hired by the Project effectively have promoted smooth communication between Japanese experts and LSOs. It is necessary to ensure the process of decision-making process of project activities through mutual consensus between Japanese experts and C/Ps.

4.5. Technology Transfer and Capacity Development

The Project assigns two (2) core farmers and one (1) coordinator for each target LSO, utilizing LSOs and their network at the community level so as to disseminate effectively and efficiently technologies and knowledge obtained from the Project. In addition, the Project has held return seminars/ workshops almost every time after overseas training in Japan, Turkey and Thailand and market survey and study tour in Islamabad, Lahore, Swat and Chitral were conducted. A total of 1,505 (947 males and 558 females) participants attended 17 return seminars/ workshops organized by the Project. The further information on the seminars/ workshops is shown in Annex 9. Accordingly, LSOs are expected to encourage VOs/WOs under the supervision of LSOs to



disseminate project outcomes to community members of the VOs/WOs.

Capacity development of C/Ps and LSOs is being effectively achieved through seminars, workshops, overseas training and DMC market survey to some extent. C/Ps have obtained new skills in marketing techniques and core farmers from LSOs have obtained new skills and techniques in cultivation techniques (grafting, training, combination of early and late varieties, pruning, harvesting fertilization, etc.), basic processing methods, and grading and packing methods.

4.6. Collaboration with the Private Sector

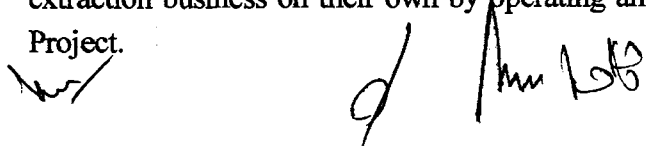
Collaboration with the private sector is one of the characteristics of the Project implementation. A total of 11 management officials (CEOs or directors) of private firm participate in overseas training on Japan, Thailand and France A total of three (3) managing director and CEOs joined in market survey and study tours in Lahore and Islamabad.

Also, the Project implemented training to core farmers, contracting with private firm ECI on extension skill and hired Mr. Zulfiqar Ali Ghazi form Vocational and Technical Training Center in Hunza-Nagar hired as the consultant for the market survey and study tours in Lahore held in November 2014. He also plays a significant role in providing apricot processing skills to farmers in the pilot areas. Mr. Ajab Gull, an apple trader, also has played a significant role in grading and packing of apples. He conducted training sessions on grading and packing of apples to farmers twice in September 2013 and 2014. The details of training trained by local experts are shown in Annex 10.

4.7. Ownership of the Project

The project activities have obviously encouraged DoA officials and target LSOs to develop a sense of ownership of the Project. According to the available annual reports of DoA, DoA and LSOs conducted a total of 107 seminars on MML and BCL, pruning, grading and packing, processing, thinning, drying, etc. on their own during the absence of Japanese experts in GB region.

For example, a women organization in Aliabad (a member organization of GOLD) started oil extraction business on their own by operating an apricot oil extraction machine provided by the Project.

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Chapter 5 Results of the Review

5.1. Review of the Project

5.1.1. Relevance

Relevance of the Project is high as described below.

(1) Consistency with Pakistani development plans/strategy

Agriculture Sector is a key sector: contributes 21.4 % to GDP, employment opportunities for 43 % of country's labour force and contributes about 60 % to exports. The Pakistani Government formulated Vision 2025 in May 2014, which "envisages improving the productivity, profitability competitiveness and environmental sustainability of agriculture and allied sub-sectors. The emphasis is on value addition, improving productivity and moving from subsistence to market oriented farming in the country, not only to meet the domestic demand but also to produce surplus for exports. The objective is to exploit potential of our agriculture sector for national food security and as an engine for associated sectors for overall economic growth for the country."(Annual Plan 2014-15, Ministry of Planning, Development & Reform)

The Project is highly consistent with the Plan since it focuses on increase in production and sales of high quality fruits (apricot products and apples) in the GB region through improving the productivity, profitability and competitiveness. Many stakeholders in GB Government clearly mentioned that the Project is highly consistent with the direction of the Government because of the focus on market-oriented value addition of fruits products.

(2) Consistency with the Japanese assistance strategy for Pakistan

"Country Assistance Policy for the Islamic Republic of Pakistan" was disclosed by the Ministry of Foreign Affairs in April 2012, which focuses on establishment of stable and sustainable society through economic development as the basic principle of assistance. Furthermore, so as to attain the basic principle, the strategy obviously indicates three priority areas as mid-term objectives; (i) improvement of economic infrastructure, (ii) ensuring human security and improving social welfare and (iii) securing national-boundary areas and balanced development. Improvement of economic infrastructure includes development of agricultural and rural sector and stabilization of Pakistani economy and promotion of diversification of industrial structure of the country.

The Project is consistent with the Country Assistance Policy since it puts stress on increase in production and sales of high quality apricot products and apples in the pilot areas of the GB region, which would lead to development of agricultural and rural sector and stabilization of the GB region as well as Pakistani economy.

(3) Necessity of the Project

The target region, the GB region, is widely known as the one of the least developed areas in the country. The country cannot prosper or progress without any part of its area or peoples left behind in the way to development. Therefore, it is highly meaningful for the country to promote

development of the region through increase in production and sales of high quality apricot products and apples in the region.

As with marketing of fruits, quality is the most important element and to improve quality tree management and value addition is most important, which is met with the objective of the Project.

For farmers and LSOs in the GB region, the Project matches their needs since it is necessary for them to stable their income selling by quality apricot products and apples.

(4) Approach of the Project

The Project adopts the approach focusing on improvement of value-addition of fruits tree products through assistance for improved production, processing and marketing. The approach of the Project is relevant with the current Pakistani development direction since the emphasis is on value addition, improving productivity and moving from subsistence to market oriented farming in the country in Vision 2025.

5.1.2. Effectiveness

The effectiveness of the Project is relatively low.

Logical sequence of the causal relationships between Outputs 1, 2 and the project purpose 1 is strong enough since (i) improved production and marketing of apricot products (Output 1) and (ii) improved production and marketing of apples (Output 2) are indispensable to increased production and sales of high quality apricot products and apples in the pilot areas (project purpose).

Achievement level of Output 1 and Output 2 with regards to the achievement of project purpose is satisfactory as of the mid-term review study since the improvement of production and marketing of apricot products and apples are improved as described in “3.2. Outputs.”

As described in “3.3. Project Purpose,” in the middle of the project implementation, the achievement of the project purpose would be expected if there is positive change in total sales of A-graded apricot, apricot kernels, kernel products, and apricot oil.


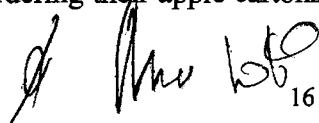
However, the following positive influences regarding the achievement of the project purpose have been observed.

[Cultivation techniques]

- Cultivation techniques and skills including pruning, thinning, and application of Bokashi are well accepted by core farmers of pilot LSOs. Some prominent farmers and core farmers had opportunities to disseminate them to other farmers in the non-target districts such as Gilgit District.

[Marketing of apricot and apple]

- Based on the marketing and sales experiences of the market research study conducted by the Project, 20 apple farmers in central Hunza formed an association, Hunza Apple Growers Association (HAGA) for collective shipment and sales of apple led by BRISO. The association has implemented sales and marketing activities without any assistance from the Project including ordering their apple cartons, hiring local women who conduct grading and

 
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- packing, and hiring a truck to deliver apples to Islamabad wholesale market.
- Five (5) farmers from HRSO collectively shipped and sold their apples to Islamabad wholesale market. Based on the technical experience and knowledge obtained from the Project, they graded and packed their products by themselves. The sales amount was increased by about 100% as a result of this collective sales activity.
 - A total of 2,000kg of apples produced by farmers from RLSO were sold to Metro supermarket through a trader in Nagar.
 - With the assistance of the Project, Organo Botanica finally procured 4.5 tons of dried apricots, 3.0 tons of which were exported to Japan through Far East Bazar, a Japanese trade company mainly deal in products from the foreign countries.

[Promoting factors]

Collaboration and cooperation between DoA and target LSOs

[Inhibiting factors]

Ban on visiting of Japanese experts to the GB region in the beginning of July 2013 to the beginning of October 2014.

Epidemic of shot hole disease on apricot in the central Hunza and Nagar areas

[Important assumptions]

Important assumptions for the achievement of the project purpose are “Priority of fruit production for the farmers in the project area remains high,” “Market conditions for value-added fruit products will not drastically worsen,” “Natural disaster affecting fruit production will not occur,” and “Stakeholders of the Project (dried fruits processors and fruits traders) will provide necessary cooperation.”

As of the mid-term review, the assumptions are met. Priority of fruit production for the farmers in the project area as well as GB government remains high. Market conditions for value-added fruit products are not expected to be drastically worsen since no severe competition between Pakistani and imported products will be occurred mainly due to the difference in target customers. Stakeholders including fruits processors and fruits traders of the Project continue to have an intention to provide necessary cooperation.

5.1.3. Efficiency

The efficiency of the Project is fair.

With regards to quality and quantity, input from the Pakistani side and Japanese side such as allocation of C/Ps, allocation of Japanese experts, provided equipment, overseas training, offices and facilities are relatively appropriate except not sufficient allocation of Japanese experts.

With regards to timing, the Japanese expert team was banned visiting of the GB region in the beginning of July 2013 to the beginning of October 2014 due to a massacre occurred at Nanga Parbat on June 23, 2013, which resulted in delayed progress in some project activities. In particular, in-site training of cultivation techniques in apricots cultivation and processing directly by the Japanese experts just started in 2015, which inhibited the efficiency.

During the absence of Japanese experts in the GB region, with the assistance of DoA, target LSOs and motivated core farmers carried out many seasonal activities by their own resource such as campaigns on pruning, budding and grafting, Bokashi/compost preparation. However, understanding of farmers on the cultivation techniques and skills introduced during that period such as pruning, thinning and training needs to be confirmed.

Project activities utilizing project inputs have produced outputs to some extent in spite of some delay in project activities. However, the Project has been operated relatively smoothly by DoA and target LSOs with the guidance of Japanese experts. However, achievement level of output 1 is lower than output 2 the Project was not able to provide less opportunities of technology transfer in apricot cultivation techniques than in apple cultivation techniques.

Furthermore, the Project has managed to implement its activities in collaboration with private firms as well, which would improve the efficiency since the Project can utilize knowledge and experience of the private sector.

[Promoting factors]

Collaboration and cooperation between DoA, target LSOs and core farmers

Motivated core farmers and LSOs who are committed to disseminating project outcomes

[Inhibiting factors]

Ban on visiting of Japanese experts to the GB region in the beginning of July 2013 to the beginning of October 2014

[Important assumptions]

Important assumptions for the achievement of output are “Farmers in pilot areas are willing to participate in the Project.” and “Trained DoA staff stay at their positions.”

Farmers in pilot areas are willing to participate in project activities. Farmers of target LSOs carried out many activities such as campaigns on pruning, budding and grafting, Bokashi/compost preparation. However, some trained DoA staff were transferred to other posts in non-target districts. In April 2015, main C/Ps in fruit cultivation (apple), fruit cultivation (apricot) and fruit processing were transferred to Ghizer and Ghanche districts. The Project needs to train DoA officers broadly to share the project experience and knowledge in order to mitigate negative impact of staff transfer.

5.1.4. Impact

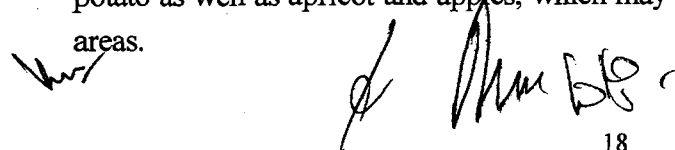
The impact of the Project is undetermined.

As of the mid-term review study, it is not appropriate now to determine the prospective of direction of achievement of overall goal of the Project as described in “3.4 Overall Goal.”

However, some positive signs have been observed, which would lead to concrete impact brought about by the Project in the future.

[Cultivation techniques]

- It is found out that farmers in the pilot areas began to apply Bokashi to cash crops such as potato as well as apricot and apples, which may lead to increase in income of farmers in the areas.



[Possibility of Formation of new Association]

- Some of the members of HAGA have an intention to enlarge the association to the farmers in the neighboring areas. In addition, a proposal to form farmers' associations for fruits production in the Hunza-Nagar areas was proposed by the participants during the discussion at the advanced marketing training held in Japan in November 2014. The discussion on the formation of a farmers' association continued to be conducted in the seminar in Islamabad in December, where a proposal for forming farmers' associations was drafted by the participants of the seminar. The idea of forming a farmers' association was approved by almost all the participants. However, there is still issue to be solved with regards to what structure of the association should take.

[Positive influence on Women]

- It is found out that some women are actively involved with local business and extension activities at the community level thanks to the Project activities. An woman organization in Aliabad (Golden Jubilee Women's Organization, a member organization of GOLD) started oil extraction as pilot activity by using oil extract machine procured by the Project, led by a core farmer. Some women community members instructed by core farmers of the Project actively disseminate production of compost and Bokashi, pruning, thinning, etc. through women's organizations.
- A few women farmers are actively engaged with extension activity of techniques and skills obtained by the Project with men in the community.
- More training opportunities were provided equally to female stakeholders according the necessity; a total of 1,180 female farmers out of 2,541 participants and 45 DoA female officials out of 355 DoA officials participated in training sessions in cultivation, processing and marketing and return seminars organized by the Project.

[Important assumption]

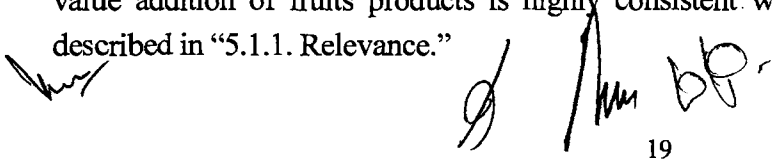
Important Assumption for the achievement of the overall goal are "Priority of fruit production for the farmers in the project area remains high," "Trained extension officers in the project area transfer their skills and knowledge to the farmers," and "Market conditions for value-added fruit products will not drastically worsen," and "Natural disaster affecting fruit production will not occur." The first, third and fourth conditions are met as of the midterm review as described in important assumptions for the achievement of the project purpose. The second condition, "Trained extension officers in the project area are willing to transfer their skills and knowledge to the farmers," according to the observation of the mid-term review Team.

5.1.5 Sustainability

Overall sustainability of the Project is expected to be fair.

(1) Political sustainability

Political sustainability is relatively high since the acceptance and promotion of market-oriented value addition of fruits products is highly consistent with the Pakistani development plan as described in "5.1.1. Relevance."

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(2) Organizational sustainability

Organizational sustainability is moderate. DoA is the only organization that is in charge of agricultural development in the GB region. However, in April 2015, project manager and three (3) main C/Ps in charge of fruit cultivation (apple), fruit cultivation (apricot) and fruit processing were transferred. It is necessary for DoA to share the project experience and knowledge within DoA broadly so as to maintain organizational sustainability.

(3) Financial sustainability

Financial sustainability is fair. The Pakistani side shared local operational cost of 9,976,550 PKR under the PC-1 Budget as compared with the Japanese side who has shared local operational cost of 16,700,000 JPY, which is equivalent to 15,659,940 PKR. The Pakistani side is expected to share the local cost for project activities in the remaining period of the implementation. According to the project coordinator from the Pakistani side, the Pakistani side will share an equivalent amount of local operational cost for 2015-16 as much as it had shared before. It is suggested to DoA to secure the further development budget (ADP) for future.

However, it is found out some LSOs seems to suffer from a lack of operation funding. The Project as well as DoA needs to take some measures for LSOs so as to operate their activities in the future. The Project has started to encourage target LSOs to develop an action plan for income generating activities.

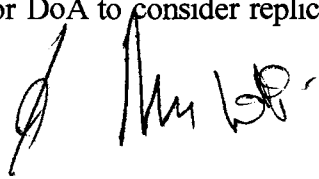
(4) Technical sustainability

Technical sustainability is fair. Farmers in pilot LSOs accept new techniques and skills obtained by the Project through overseas training, seminars and direct guidance by Japanese experts. Core farmers in the project areas are currently attempt to apply the new techniques and skills to their own fields. They have played an active role in disseminating the new techniques and skills to the neighboring farmers. Core farmers and extension officers of target LSOs have committed to disseminating skills, techniques and knowledge obtained by the Project at the community level. Some farmers began to accept new techniques and skills, observing the benefits and advantages occurred in pilot orchards of core farmers.

Furthermore, DoA staff accepts new techniques and skills obtained from the Project. DoA is currently conceptualizing a district-wise new project focusing on marketing, production and processing of target fruits based on the experience and techniques obtained from the Project, which is expected to disseminate the benefits of the Project to the whole GB area including other non-target areas in Hunza- Nagar and Skardu districts.

Besides that, it would be impossible for DoA to undertake agricultural extension appropriately without LSOs. DoA needs to consider establishing the agricultural extension system after the phase out of the Project. Moreover, understanding of farmers on the cultivation techniques and skills introduced such as pruning, thinning and training needs to be confirmed.

It is necessary for DoA to consider replicating experience of the Project to other districts that



have not LSOs so that project outcomes can be disseminated to the whole GB area.


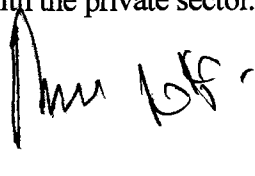
5.2 Conclusion

Due to some delayed activities due to the ban on visiting of Japanese experts to the GB region in July 2013 to October 2014, the achievement level of the project purpose will be lowered than expected at the termination of the Project even though strong commitment of DoA officials and target LSOs as well as core farmers has contributed to the current moderate achievement level of the project outcomes. As a result, the Project has produced its outcomes to some extent with high relevance, relatively low effectiveness and fair efficiency. In response that situation, the mid-term review Team suggests that the duration of Project be extended so as to ensure that sufficient period of implementation is assured for the achievement of the project purpose.

Furthermore, some indicators need to be revised or modified since they are not consistent with the current situation.

In the remaining period of implementation, the Project needs to put stress on processing of quality apricot products, promotion of marketing through regional branding and capacity development of LSOs in collaboration with the private sector.

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Chapter 6 Recommendation

6.1. Management of the Project

6.1.1. Revision of PDM

- (For all the stakeholders of the Project) During the mid-term review, logical relationship among output, project purpose and overall goal in the current PDM (Ver. 2) was reviewed and revision and modification of PDM (Ver. 2) into (Ver. 3) is proposed as shown in Annex 11. Indicators for the project purpose and outputs have partially modified to fit into the current and actual situation. Further details and more specific reasons/ justifications for the revision and modifications are presented in Annex 12.

6.1.2. Extension of the Duration of the Project

- (For all the stakeholders of the Project) The results of the study indicates that it would be impossible to attain the achievement of the project purpose since two (2) seasons would be necessary to actually satisfy the two indicators regarding apricot products for the project purpose. The mid-term review Team suggests that the duration of Project be extended until March 2017.

6.2. Dissemination

6.2.1. Dissemination of Project Outcomes

- (For DoA) As far as dissemination concerned, the mid-term review Team suggests that DoA and the Project Team clarify the roles and service areas of core farmers and mater trainers. It is proposed that LSOs have master trainers in cultivation technology, in processing technology, in value addition, and in marketing at LSO level, and have one (1) core farmer at each village/women organization. DoA is expected to train master trainers in LSOs.
- (For DoA) The mid-term review Team suggests that DoA have the horticulture development platform at the district level.
- (For the Project Team) The mid-term review Team suggests that DoA consider providing an opportunity to gather DoA staff in non-target districts and non-target LSOs by organizing a tour to project sites so as to promote dissemination of project outcomes more effectively as per Secretary of Agriculture suggested.

6.3. Communication

6.3.1. Promotion of Information Sharing between DoA and target LSOs

- (For the Project Team and DoA) The mid-term review Team suggests that DoA consider encouraging LSOs to submit quarterly monitoring reports so that they can share the progress of agriculture-related activities such as training on cultivation techniques, processing, and marketing by LSOs. Consequently, DoA is expected to fully play planning, coordinating, monitoring and advising roles in undertaking follow-up activities to cope with suggestions and challenges pointed out by farmers.



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- (For the Project Team and DoA) The mid-term review Team suggests that the Project Team and DoA consider modifying the format of quarterly monitoring sheet developed by the Project by adding some columns for suggestions and problem from farmers. The Project Team and DoA are expected to take some actions in response to their voices.

6.3.2. Mutual Consensus under the Thorough Discussion

- (For the Project Team and DoA) It is recommended that a processing firm to be encouraged to participate in project activities should be selected through mutual consensus of the Project Team, DoA under the thorough discussion between them in consideration of the attitude of private firm intending to fairly share the profits generated with farmers. Moreover, opinions of farmers in selecting a partner from the private sector also need to be taken in consideration.

6.4. Value Addition

- (For the Project Team) The mid-term review Team suggests that the Project need to consider producing other value-added processing products such as jam, juice, sweets, etc. as potential products. It may be effective for DoA and farmers in pilot areas to demonstrate the possibility and potential of other value-added products in the remaining period of the Project.

6.5. Technical Aspects

6.5.1. Confirmation of Understanding of Farmers on new Techniques and Skills

- (For DoA) The mid-term review Team suggests to DoA that understanding of farmers on new techniques and skills be confirmed since the results of field survey shows some confusion (e.g. sulfur fumigation).

6.5.2. Adequate Appropriateness of new Techniques and Skills

- (For the Project Team) The mid-term review Team suggests that appropriateness of thinning of apricot need to be adequated.

6.5.3. Necessity of Soil Test

- (For the Project Team) Soil test had not been conducted in the GB region. Therefore, it is strongly recommended to apply soil test in collaboration with Soil Testing Laboratory, DoA.

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(end)

Annex 1: Schedule of Mid-term Review Mission

		Mr. Kawasaki	Mr. Ashir Bukhar	Mr. Akira Ozakawara	Dr. Watanabe	Dr. Hirashima and Mr. Hamano
8-Jun	Mon					10:35 -15:05 from NRT to BKK(TG683) 19:50-22:30 from BKK to LHR(TG345) Hamano 1900-1955 Moving to Lahore from ISB (PK655)
9-Jun	Tue					Moving to FSD 12:00 Visit and Observation of workshop of Agriculture machinery, University of Agriculture Faisalabad Moving back to LHR
10-Jun	Wed			from NRT to BKK (TG643)/from BKK to ISB (TG349)		Water Management Training Institute, Punjab, Lahore Dinner with Prof Rashid LSE
11-Jun	Thu		9:30-10:00 Meeting with JICA 10:30-11:30 MNFSR 1200-1300 MKAGB 1430-1530 MPD			Lecture at Lahore School of Economics 1700-1755 Moving to Islamabad (PK654) Dinner Meeting with Mid-term review team
12-Jun	Fri		Documentation			10:00-12:00 Meeting with Mr. Kawasaki JICA Pakistan 13:00 Lunch at Islamabad club with Dr, Dilawar 19:00 Dinner with JICA Pakistan
13-Jun	Sat			Moving to Gilgit (by Vehicle)	from NRT to BKK (TG643) from BKK to ISB (TG349)	Documentation
14-Jun	Sun				Documentation	
15-Jun	Mon			10:00-13:00 Meeting with DOA Afternoon Interview with JICA expert, Core farmers and CPs		Documentation
16-Jun	Tue			9:30 Meeting with P&D 11:00 Processing Company (Gaba Highland Fruit) 14:00 Processing Company(Organo Botanica) 15:30 Moving to Hunza		Moving to Gilgit (by Vehicle)
17-Jun	Wed			Interview with DOA officers (Interview with Japanese experts)		Moving to Gilgit (by Vehicle)
18-Jun	Thu			Interview with LSO management staff, core farmers, extension personnel and the neighboring Fs 14:00 Golden LSO (apricot), 16:00 Visit RDO (Shia area)	Dr. Hirashima, Dr. Watanabe, and Mr. Hamano 10:00-1030 Visit to Organo Botanica 11:00-11:30 Courtesy call to Secretary and Director of DoA 13:00 Processing Company (Gaba Highland Fruit) 14:30 Mountain Area Research Center, Jaglot, Gilgit, 16:00 Observation of the training on processing	
19-Jun	Fri			Interview with LSO management staff, core farmers, extension personnel and the neighboring Fs		
20-Jun	Sat			10:00 Visit BRSO (Apple), 14:00 Visit HRSO (Apple)		
21-Jun	Sun	Flight to Gilgit(PK607) Move to Hunza Nagar		Documentation		
22-Jun	Mon			10:00 Golden LSO 13:00 Hunza Dry Fruit (Processing company in Hunza) 14:00 ARSO Drafting evaluation report 18:00 Internal meeting		
23-Jun	Tue			8:00-10:00 Moving to Upper Hunza 10:00 MASO 14:00 GRISO(including Morkhun village) 16:00-18:00 Moving to Karimabad		
24-Jun	Wed			10:00 Visit RDO 15:00 Moving to Gilgit, Documentation		
25-Jun	Thu			10:00 and 15:00 Meeting with DoA and P&D to explain the result of evaluation 11:30 Discussion on joint review report		
26-Jun	Fri			11:00 JCC, Minutes signing on review report Memorial tree Planting		
27-Jun	Sat			Moving to Islamabad from Gilgit (by PK608)		
28-Jun	Sun			Documentation		
29-Jun	Mon			Report to Embassy of Japan		
30-Jun	Tue			Contingency		
1-Jul	Wed			from ISB to BKK (TG350)		
2-Jul	Thu			from BKK to NRT (TG676)		

Annex 2: Project Design Matrix

<p>Title of the Project: Promotion of Value Added Fruit Products in Gilgit-Baltistan, Pakistan Term of Cooperation: 4 years from the arrival of the Japanese expert(s) Project Area: Gilgit-Baltistan Target Group: The farmers in the Project Area (* Pilot LSOs: BRSo, HRSo. LSO GOLD, RDO and RLSO) Implementing Organization: Department of Agriculture (DoA)</p>	<p>PDM-1 (Ver: 1) was prepared on 2011/07/19 PDM-1 (Ver: 2) was prepared on 2014/10/30</p>
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Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumption
<p>Overall Goal Production and marketing of apricot products and apples are improved in the project area</p>	<p>Sale amount of dried apricots and apples in Hunza-Nagar district in 2016 is increased more than 15% in 2018.</p>	<p>Gilgit-Baltistan Agriculture Statistics Survey Report</p>	
<p>Project Purpose Production and sales of high quality apricot products and apples are increased in the pilot areas.</p>	<p>1. Total quantity of A-graded dried apricots which are produced by the farmers in the project sites (the sub-villages where the core farmer reside) is increased by 30%. (A-graded dried apricots will be determined every year based on the result of interviews with farmers and traders. Unit prices of A-graded dried apricot are 120 PKR/Kg for opened style and PKR180/Kg for Turkish Style and Guli in the first year.) (Total sales volume was 1,350Kg (221 sample households) in the first year) 2. Total sales volume of apricot kernels, kernel products, apricot oil and oil products which are produced by the farmers in the pilot LSOs is increased by 30%. (Total sales volume in PKR in the first year will be collected at the mid-term survey.) 3. 80% of apples sold at Rawalpindi wholesale market through marketing research are graded S3 as average**. (Grade was S1 in the first year.) (** At least three wholesalers grade the apples and calculate the average. *Targeted figure "30%" is to be reconsidered as of the mid-term review.</p>	<p>Commodity chain survey</p>	<ul style="list-style-type: none"> • Priority of fruit production for the farmers in the project area remains high. • Trained extension officers in the project area transfer their skills and knowledge to the farmers. • Market conditions for value-added fruit products will not drastically worsen. • Natural disaster affecting fruit production will not occur.
<p>Output 1. Production and marketing of apricot products are improved.</p>	<p>1-1. Manuals for cultivation, processing and marketing 1-2. The percentages of farmers in the pilot LSOs who apply the following technique in apricot cultivation and processing as per guidance by the Project reach to the indicated numbers (percentages of farmers who apply these techniques before the project start are 0%). <ul style="list-style-type: none"> • Root stock management (50%) • Grafting (50%) • Pruning (50%) • Pesticide application (50%) • Fertilization (50%) • Processing (50%) 1-3. Marketing plan (including regional branding plan, etc.) for apricot products is developed focusing on sustainable farmers' income generation.</p>	<p>1. Manuals for cultivation, processing and marketing are made 2. Project documents 3. Commodity chain survey</p>	<ul style="list-style-type: none"> • Priority of fruit production for the farmers in the project area remains high. • Market conditions for value-added fruit products will not drastically worsen. • Natural disaster affecting fruit production will not occur. • Stakeholders of the Project (dried fruits processors and fruits traders) will provide necessary cooperation.

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2. Production and marketing of apples are improved.

2-1. Making manuals for cultivation, processing and marketing.

2-2. The percentages of farmers in the pilot LSOs who apply the following technique in apple cultivation as per guidance by the Project reach to the indicated numbers (Percentages of farmers who apply these technique before the project start are 0%).

- Disbudding and thinning fruits :50%
- Grafting :50% (Recognition on the proper timings of cleft grafting, side grafting, and bud grafting are the main training targets.)
- Seeding production :50%
- Pruning :50%
- Pesticide application :50% (Introduction of organic pesticide)
- Application of newly introduced organic fertilizer :50%

2-3. The number of farmers in the project site who record the amount of apple produced and sold is increased by 20%.

(Ratio of farmers recorded the amount of apple projection in the first year will be collected at the mid-term survey.)

2-4. The number of farmers who harvest, grade and pack for themselves is increased by 10%.

(19 % (49HHs) of farmers harvested for themselves and 9% (21HHs) of them graded for themselves in the first year.)

(Ratio of farmers packed their apples in the first year will be collected at the mid-term survey.)

2-5. Marketing plan (including regional branding plan, etc.)for apple is developed focusing on sustainable farmers' income generation

*All numerical targeted figures are to be reconsidered as of the mid-term review.

Activity	Inputs		<ul style="list-style-type: none"> • Farmers in pilot areas are willing to participate in the Project. • Trained DoA staff stay at their positions.
	Japanese Side	Pakistani Side	
1-1. Select the pilot areas and the core farmers. 1-2. Introduce and disseminate the market research methods through the extension officers and the core farmers. 1-3. Identify the varieties suitable for high quality dried apricot. 1-4. Disseminate the appropriate cultivation techniques (combination of early and late varieties, grafting, shoot training, pruning, thinning, harvesting, fertilization, etc.) through the extension officers and the core farmers. 1-5. Introduce and disseminate the standards of specifications and quality control methods for dried apricots, apricot oil and kernel nuts through the extension officers and the core farmers. 1-6. Develop and disseminate the appropriate processing facilities, equipment and methods for dried apricots, apricot oil and kernel nuts through the extension officers and the core farmers. 1-7. Promote the dried apricots and apricot oil in international and domestic markets in cooperation with the private organizations (e.g., branding, exhibition, certification, etc.). 1-8. Develop the manuals of cultivation, processing and marketing for the extension officers and the farmers.	1. Experts (1) Team Leader / Training 1 (2) Marketing (3) Fruit cultivation (Apple) (4) Fruit cultivation (Apricot) (5) Fruit processing (6) Project coordinator / Training 2 Local consultants, if necessary	1. Project Staff • counterpart personnel 2. Facilities / Buildings • Office space and necessary facilities for the Japanese experts 3. Expenses • Necessary recurrent costs such as staff salaries and allowances, fuels, transportation, and utility charges	Pre-conditions <ul style="list-style-type: none"> • Necessary budget for the activities of DoA is secured. • Security situation in the project area remains stable.
2-1. Select the pilot areas and the core farmers. 2-2. Introduce and disseminate the market research methods through the extension officers and the core farmers. 2-3. Identify the varieties suitable for high quality apple. 2-4. Disseminate the appropriate cultivation techniques (combination of early and late varieties, grafting, shoot training, pruning, thinning, harvesting, fertilization, etc.) through the extension officers and the core farmers. 2-5. Introduce and disseminate the standards of specifications and quality control methods for apples through the extension officers and the core farmers. 2-6. Develop and disseminate the appropriate grading and packaging methods for apples through the extension officers and the core farmers. 2-7. Promote the apples in international and domestic markets in cooperation with the private organizations (e.g., branding, exhibition, certification, etc.). 2-8. Develop the manuals of cultivation, processing and marketing for the extension officers and the farmers.	2. Equipment / Machinery • Office equipment and others, if necessary	3. Training in Japan • Training on cultivation, processing and marketing	

Annex 3: Inputs from the Japanese Side

1. Dispatch of Japanese Experts

1) EXPERTS (Fieldwork)									
No.	Name	Year	Field	Period		M/M (Plan)		M/M (Result)	
				From	To	Days	M/M	Days	M/M
1	Mr. Kenichi Machida	2012	Team Leader/Training Planning 1	2012/7/24	2012/12/31	53	1.77	53	1.77
		2013	Team Leader/Training Planning 1	2013/1/1	2014/3/31	67	2.23	67	2.23
		2014	Team Leader/Training Planning 1	2014/5/15	2015/2/28	28	0.93	28	0.93
		2015	Team Leader/ Extension System	2015/4/3	2015/5/31	33	1.10	33	1.10
		Sub TOTAL						181	6.03
2	Mr. Yukio Ikeda	2012	Sub Leader/Marketing	2012/7/24	2012/12/31	69	2.30	69	2.30
		2013	Sub Leader/Marketing	2013/1/1	2014/3/31	145	4.83	145	4.83
		2014	Sub Leader/Marketing	2014/5/15	2015/2/28	88	2.93	60	2.00
		2015	Sub Leader/Marketing	2015/4/3	2015/5/31	38	1.27	38	1.27
		Sub TOTAL						340	11.33
3	Mr. Kunihiko Suzuki	2012	Fruit Cultivation (Apricot)	2012/7/24	2012/12/31	49	1.63	49	1.63
		2013	Fruit Cultivation (Apricot)	2013/1/1	2014/3/31	82	2.73	82	2.73
		2014	Fruit Cultivation (Apricot)	2014/5/15	2015/5/31	14	0.47	14	0.47
		Sub TOTAL						145	4.83
4	Mr. Tomoyuki Kon	2015	Fruit Cultivation (Apricot)	2015/4/3	2015/5/31	32	1.07	32	1.07
Sub TOTAL						32	1.07	32	1.07
5	Mr. Yoshiro Kodera	2012	Fruit Cultivation (Apple)	2012/7/24	2012/12/31	77	2.57	77	2.57
		2013	Fruit Cultivation (Apple)	2013/1/1	2014/3/31	94	3.13	94	3.13
		2014	Fruit Cultivation (Apple)	2014/5/15	2015/2/28	14	0.47	14	0.47
		2015	Fruit Cultivation (Apple)	2015/4/3	2015/5/31	56	1.87	56	1.87
Sub TOTAL						241	8.04	241	8.04
6	Mr. Tamotsu Murai	2015	Pest and Disease Control	2015/4/3	2015/5/31	23	0.77	23	0.77
Sub TOTAL						23	0.77	23	0.77
7	Mr. Toshiharu Sato	2012	Fruit Processing	2012/7/24	2012/12/31	51	1.70	51	1.70
		2013	Fruit Processing	2013/1/1	2014/3/31	59	1.97	59	1.97
		2014	Fruit Processing	2014/5/15	2014/7/31	40	1.33	11	0.37
		Sub TOTAL						150	5.00
8	Mr. Hiroto Aihara	2014	Fruit Processing	2014/7/14	2015/2/28	0	0.00	27	0.90
		2015	Fruit Processing	2015/4/3	2015/5/31	28	0.93	28	0.93
		Sub TOTAL						28	0.93
9	Mr. Ryoto Uchida	2012	Coordinator/ Training Program 2	2012/7/24	2012/12/31	60	2.00	60	2.00
		2013	Coordinator/ Training Program 2	2013/1/1	2014/3/31	97	3.23	97	3.23
		2014	Supply Chain Management/ Coordinator/ Training Program	2014/5/15	2015/2/28	97	3.23	79	2.63
		2015	Supply Chain Management	2015/4/3	2015/5/31	28	0.93	28	0.93
		Sub TOTAL						282	9.39
10	Mr. Shinta Nishino	2015	Coordinator/ Training Program	2015/4/3	2015/5/31	48	1.60	48	1.60
Sub TOTAL						48	1.60	48	1.60
TOTAL						1470	48.99	1422	47.40

2) EXPERTS (Work in Japan)

No.	Name	Year	Field	Period		M/M (Plan)		M/M (Result)	
				From	To	Days	M/M	Days	M/M
1	Mr. Kenichi Machida	2012	Team Leader/Training Planning 1	2012/7/24	2012/12/31	21	0.70	21	0.70
		2013	Team Leader/Training Planning 1	2013/1/1	2014/3/31	7	0.23	7	0.23
		2014	Team Leader/Training Planning 1	2014/5/15	2015/2/28	26	1.30	26	1.30

		2015	Team Leader/ Extension System	2015/4/3	2015/5/31	5	0.25	5	0.25
			Sub TOTAL			59	2.48	59	2.48
2	Mr. Yukio Ikeda	2012	Sub Leader/Marketing	2012/7/24	2012/12/31	13	0.43	13	0.43
		2013	Sub Leader/Marketing	2013/1/1	2014/3/31	40	1.33	40	1.33
		2014	Sub Leader/Marketing	2014/5/15	2015/2/28	34	1.70	38	1.90
		2015	Sub Leader/Marketing	2015/4/3	2015/5/31	5	0.25	5	0.25
			Sub TOTAL				92	3.71	96
3	Mr. Kunihiko Suzuki	2012	Fruit Cultivation (Apricot)	2012/7/24	2012/12/31	9	0.30	9	0.30
		2013	Fruit Cultivation (Apricot)	2013/1/1	2014/3/31	13	0.43	13	0.43
		2014	Fruit Cultivation (Apricot)	2014/5/15	2015/5/31	25	1.25	25	1.25
			Sub TOTAL				47	1.98	47
4	Mr. Tomoyuki Kon	2015	Fruit Cultivation (Apricot)	2015/4/3	2015/5/31	3	0.15	3	0.15
			Sub TOTAL				3	0.15	3
5	Mr. Yoshiro Kodera	2012	Fruit Cultivation (Apple)	2012/7/24	2012/12/31	9	0.30	9	0.30
		2013	Fruit Cultivation (Apple)	2013/1/1	2014/3/31	30	1.00	30	1.00
		2014	Fruit Cultivation (Apple)	2014/5/15	2015/2/28	75	3.75	71	3.55
		2015	Fruit Cultivation (Apple)	2015/4/3	2015/5/31	0	0.00	0	0.00
			Sub TOTAL				114	5.05	110
6	Mr. Tamotsu Murai	2015	Pest and Disease Control	2015/4/3	2015/5/31	3	0.15	3	0.15
			Sub TOTAL				3	0.15	3
7	Mr. Toshiharu Sato	2012	Fruit Processing	2012/7/24	2012/12/31	10	0.33	10	0.33
		2013	Fruit Processing	2013/1/1	2014/3/31	10	0.33	10	0.33
		2014	Fruit Processing	2014/5/15	2014/7/31	5	0.25	12	0.60
			Sub TOTAL				25	0.91	32
8	Mr. Hiroto Aihara	2014	Fruit Processing	2014/7/14	2015/2/28	12	0.60	12	0.60
		2015	Fruit Processing	2015/4/3	2015/5/31	3	0.15	3	0.15
			Sub TOTAL				15	0.75	15
9	Mr. Ryoto Uchida	2012	Coordinator/ Training Program 2	2012/7/24	2012/12/31	16	0.53	16	0.53
		2013	Coordinator/ Training Program 2	2013/1/1	2014/3/31	16	0.53	16	0.53
		2014	Supply Chain Management/ Coordinator/ Training Program	2014/5/15	2015/2/28	26	1.30	38	1.90
		2015	Supply Chain Management	2015/4/3	2015/5/31	3	0.15	3	0.15
			Sub TOTAL				61	2.51	73
10	Miss. Mika Kawamoto	2013	Third Country Training	2013/1/1	2014/3/31	120	4.00	120	4.00
			Sub TOTAL				120	4.00	120
11	Miss. Yoshiko Honda	2014	Third Country Training	2014/5/15	2015/2/28	120	6.00	120	6.00
			Sub TOTAL				120	6.00	120
12	Mr. Shinta Nishino	2015	Coordinator	2015/4/3	2015/5/31	3	0.15	3	0.15
			Sub TOTAL				3	0.15	3
TOTAL						662	27.84	681	28.79

Days	M/M	Days	M/M
1470	48.99	1422	47.4
662	27.84	681	28.79
2132	76.83	2103	76.19

2. List of Equipment

JFY	Item Name	Model	Qty	Cost (JPY)	Location	Status		Remarks
						Condition of Equipment	Frequency of Use	
2012	Integrated printer (Copier)	Xerox Work Centre 7125	1	891,408	Office of the Deputy Director Agriculture Hunza Nagar	A	A	
	Refrigerator/freezer	National 805T	1	50,451	Office of the Deputy Director Agriculture Hunza Nagar	B	D	
	Projector	Acer X110P	1	55,637	Office of the Deputy Director Agriculture Hunza Nagar	B	C	
	Video camera	Sony HDE-CX210E	1	54,694	Office of the Deputy Director Agriculture Hunza Nagar	A	D	
	Laptop PC	HP ProBook 4530s	1	54,694	Office of the Deputy Director Agriculture Hunza Nagar	B	A	
	Laptop PC	HP ProBook 4540s	1	54,694	Office of the Deputy Director Agriculture Hunza Nagar	B	A	
	Color Laserjet Printer	HP CP1020	1	40,549	Office of the Deputy Director Agriculture Hunza Nagar	B	A	
	4 in 1 B/W Printer	Panasonic KXMB2025	1	37,720	Office of the Deputy Director Agriculture Hunza Nagar	B	A	
	Generator	KIPOR KGE2500E	1	61,295	Office of the Deputy Director Agriculture Hunza Nagar	B	A	
	Brixmeter (2 sets)	Atago PAL-J	1	62,889	Office of the Deputy Director Agriculture Hunza Nagar	A	C	
Acidmeter (2 sets)	Atago PAL-AC1	1	117,000	Office of the Deputy Director Agriculture Hunza Nagar	A	C		
2013	Apricot Oil Extractor	Tuchmir Engineering	1	240,786	Golden Jubilee Organization for Local Development, Aliabad	B	A	
2014	Laptop PC	Gigabite	1	57,942	Office of the Deputy Director Agriculture Hunza Nagar	A	C	
	Sprayer	Turbo-100E	1	111,435	Office of the Deputy Director Agriculture Hunza Nagar	A	C	
2015	Motorcycle	Honda euro 2 CG125	2	243,950	Office of the Deputy Director Agriculture Hunza Nagar	A	B	
	Sprayer	Turbo-100E	2	226,100	Office of the Deputy Director Agriculture Hunza Nagar	A	D	
	Laptop PC	Inspiron 15 3000 series	1	57,894	Office of the Deputy Director Agriculture Hunza Nagar	A	E (Procured in April 2015)	
TOTAL				2,422,939				

	Condition of equipment	Classification of the frequency of use of the equipment
Rank	Statement	Statement
A	good condition	Used frequently: Almost everyday
B	in moderate condition	Used well : 1-3 times per week
C	for repair	Used: 1-3 times per month
D	unable to use	Not so much used: 1-3 times per year
E	lost	Never used: Not used

3. Operational Cost Sharing

Local cost borne by the Japanese side

	Year 1	Year 2	Year 3	Year 4 *	Total
• Training /seminar in Pakistan (per-diem, logging allowance, rental car, seminar room, fee for lecturers)	110,000	1,060,000	990,000	330,000	2,490,000
• Market survey and study tour (per-diem, logging allowance, rental car)	640,000	1,380,000	420,000	0	2,440,000
• Household survey and market survey (Year 1)	2,390,000	0	850,000	4,490,000	7,730,000
• Office expenses (Stationery, communication cost)	250,000	220,000	130,000	10,000	610,000
• Technical activities on the field (Consumable goods)	300,000	1,570,000	1,340,000	220,000	3,430,000
Total	3,690,000	4,230,000	3,730,000	5,050,000	16,700,000

[JPY]

(Note)

- Training /seminar in Pakistan (per-diem, logging allowance, rental car, seminar room, fee for lecturers) for Year 4 includes expenditure until the end of April 2015.
- Household survey and market survey (Year 1) for Year 4 includes expenditure until the end of May 2015.
- Office expenses (Stationery, communication cost) and Technical activities on the field (Consumable goods) for Year 4i includes expenditure until May 11, 2015.

4. Training in Japan and other Countries

No.	Year	Training Course Title	Country	Period		Number of Trainees								
				From	To	DoA		Farmer/LSO		Private firm		Male	Female	Total
						Male	Female	Male	Female	Male	Female			
1	2013	Training, Pruning, Grafting and Marketing	Japan	2013/2/17	2013/3/16	2	0	5	0	0	0	7	0	7
2	2013	Disease and pest control, fertilization, disbudding, fruit thinning and marketing	Japan	2013/5/12	2013/6/8	1	0	6	0	0	0	7	0	7
3	2013	Apricot processing and marketing	Japan	2013/7/7	2013/7/20	2	1	0	3	2	0	4	4	8
4	2013	Exposure tour to learn the advanced cultivation and processing techniques of apricots and other fruits in Turkey	Turkey	2013/9/29	2013/10/7	1	0	3	0	1	0	5	0	5
5	2013	Selection of superior varieties, post-harvest activities, and marketing of apples	Japan	2013/11/2	2013/11/4	3	0	3	1	0	0	6	1	7
6	2013	Training on marketing and promotion of apricot products at an exhibition in Japan	Japan	2014/3/2	2014/3/12	1	0	2	0	2	0	5	0	5
7	2014	Apple cultivation-1	Japan	2014/6/29	2014/8/14	1	0	3	2	0		4	2	6
8	2014	Apricot Cultivation	Japan	2014/7/21	2014/8/14	2	0	4	0	0	0	6	0	6
9	2014	Food Processing	Thailand	2014/9/22	2014/9/29	2	0	0	0	3	0	5	0	5
10	2014	SIAL Food Expo, 2014	France	2014/10/16	2014/10/27	1	0	0		2	0	3	0	3
11	2014	Apple Cultivation-2	Japan	2014/10/26	2014/12/6	2	0	4	0	0	0	6	0	6
12	2014	Agriculture Extension System	Japan	2014/11/3	2014/11/15	3	0	9	1	0	0	12	1	13
13	2014	Advanced Marketing	Japan	2014/11/9	2014/11/22	1	0	4	1	1	0	6	1	7
Total						22	1	43	8	11	0	76	9	85
Grand Total						23		51		11		85		

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Annex 4: Inputs from the Pakistani Side



1. Counterpart Assignment

The Secretary, Agriculture, Livestock and Fisheries Department, Gilgit-Baltistan	2012/1/3	2013/4/8	██████████			
-do-	2013/4/9	2014/2/26		██████████		
-do-	2014/4/1	2014/11/7			██████████	
-do-	2014/11/11	at present			██████████	
Director Agriculture	2012/9/10	2015/4/20	████████████████████			✓
-do-	2015/4/20	at present			██████████	
Deputy Director Agriculture	2012/9/10	at present	████████████████████			✓
Deputy Director Agriculture Hunza-Nagar	2014/5/28	2015/4/12		██████████		✓
-do-	2015/4/13	at present			██████████	
Deputy Director Agriculture	2012/9/10	2013/10/1	██████████			✓
-do-	2013/10/1	at present		████████████████████		
Agricultural Assistant Hunza-Nagar	2012/9/10	at present	████████████████████			✓
Agricultural Officer Hunza-Nagar	2012/9/10	2015/4/12	████████████████████			✓
-do-	2015/4/13	at present			██████████	
-do-	2013/3/25	at present		████████████████████		✓
-do-	2015/4/13	at present			██████████	✓
Agricultural Officer	2012/9/10	2015/4/12	████████████████████			
Agricultural Officer Hunza-Nagar	2013/3/25	at present		████████████████████		✓
-do-	2015/4/13	at present			██████████	✓
Deputy Director Agriculture Skardu	2014/5/28	2014/10/29			██████████	✓
Deputy Director Agriculture Ganche	2014/10/30	at present			██████████	
Agricultural Officer Skardu	2012/9/10	2014/10/29	████████████████████			✓
Agricultural Officer Ganche	2014/10/30	at present			██████████	
Deputy Director Agriculture Skardu	2012/9/10	2015/4/12	████████████████████			✓
Agricultural Officer Skardu	2015/4/13	at present			██████████	✓

2. Operational Cost Sharing

No.	Category	Detail	2012-13*	2013-14*	2014-15*	Total
			PKR	PKR	PKR	PKR
1	Establishment Charges	Staff salary	1,721,409	1,234,321	1,124,000	4,079,730
2	Strengthening of food Processing Centre	Processing facility, Machinery, Equipment, Raw materials, Chemical	238,695	351,025	840,000	1,429,720
3	Cost of durable goods	Laptop, Computer, Printer	33,790	148,000	251,000	432,790
4	Operational Budget	Repair and maintenance of vehicles, Repair and maintenance of Office equipment Postage/Courier, Telephone/internet, Publicity charges, Startup workshop, meeting, seminars etc. Stationery, Rent of Building, Utility bills (Electricity, Gas etc.), Hot & Cold weather charges	2,606,106	3,466,654	3,471,000	9,543,760
Total			4,600,000	5,200,000	5,686,000	15,486,000

financial year: July to June

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Annex 5: Project Activities

Output 0: Project plan is drawn up and the management system is established.	
Project Activities	Actual Progress
0-1 Revise the PDM	The PDM was revised once on October 30, 2014.
0-2 Draw up work plan (work in Japan).	The Project drew up and submitted work plan (English version) four times in August 2012, January 2013, June 2014 and April 2015. The Project also drew up and submitted work plan (Japanese version) three times in August 2012, May 2014 and April 2015.
0-3 Hold the Joint Coordinating Committee (JCC).	The Project held JCC three times in October 9, 2012; April 22, 2013; and October 30, 2014.
0-4 Establish the project implementation structure.	The Project Management Unit (PMU) that consists of DoA officers and JICA experts plays a leading role in managing and implementing project activities in collaboration with LSOs and farmers. The Project appoints two (2) core farmers and at least one (1) extension personnel for each target LSO. They are expected to play a leading role in disseminating technologies introduced by the Project to other farmers within target LSO as well as to other LSOs. Joint Coordinating Committee (JCC) are established to discuss, approve and decides the important issues of the Project such as progress report, annual work plan and PDM and to share the progress of the Project.
0-5 Establish the extension system	The Project has put stress on extension activities in the third implementation year, assigning an expert in extension. Chief advisor plays a role of extension as well.
0-6 Hold the final seminar	The Project will hold the final seminar so as to present and disseminate the results and achievement of the Project before the termination.

Output 1: Production and marketing of apricot products are improved.	
Project Activities	Actual Progress
1-1. Select the pilot areas and the core farmers.	Hunza-Nagar and Skardu are selected as a target and sub-target districts respectively. In 2012, six (6) pilot LSOs (RDO, GOLD, MLSO, RLSO, BRSO and HRSO) and two (2) core farmers for each pilot LSO were selected as the target LSOs. In April 2015, another three (3) pilot LSOs (MASO, GRSO and ARSO) were added as the additional target LSOs and two (2) core farmers for each pilot LSO were also selected so as to promote extension of skills and knowledge.
1-2. Introduce and disseminate the market research methods through the extension officers and the core farmers.	Through the market research, the prices of major types of dried apricots in DC become clear. Some of the potential buyers of high quality dried apricots have been identified. The Project conducted the baseline survey in September 2012 and the mid-term survey in April 2015 for the target area (Hunza-Nagar and Skardu) to grasp the current situation of fruit production and marketing in the target area. The results of the mid-term survey will be finalized in the end of May 2015.
1-3. Identify the varieties suitable for high quality dried apricot.	Top 10 high commercial value varieties (e.g. Habie, Alishakhakas, Shikanda, etc. from Hunza-Nagar, and Halman, Karfo Chuli and Sul Chaks from Skardu.) for dried apricots, kernel nuts and apricot oil were selected by C/P, core farmers and target LSOs. Preferred varieties in Japan and DC were identified.
1-4. Disseminate the appropriate cultivation techniques (combination of early and late varieties, grafting, shoot training, pruning, thinning, harvesting, fertilization, etc.) through the extension officers and the core farmers.	Apricot cultivation training was provided to DoA counterparts, LSO extension personnel, core-farmers, C/P training trainees and local seminar participants on grafting, young tree management, fruit thinning, pruning, training, and lowering trees and changing tree shape in Japan and project target area. Training on Bokashi, Mountain Micrograms Liquid (MML), BCL (insect repellent), organic fertilizer (Bordeaux mixture) was also provided. The Project developed several teaching materials for farmers so as to disseminate techniques and skills introduced by the Project. The current challenges to be mainly coped with are to select the mother trees of the superior varieties. The Project is scheduled to start the activity in 2015.
1-5. Introduce and disseminate the	The information on the quality standards were collected in the market survey in

<p>standards of specifications and quality control methods for dried apricots, apricot oil and kernel nuts through the extension officers and the core farmers.</p>	<p>Islamabad and Lahore where DoA C/Ps, core farmers, local consultant, as well as supply chain expert met with wholesalers and retailers. Also, the relevant information on European market are collected by the participants to the SIAL exhibition in Paris, which included marketing and supply chain expert.</p> <p>The JICA expert discussed with Nippon Kaji Kentei Kyokai (NKKK) and OMIC Co., Ltd. of Japan, a pesticide residuals analysis and food testing firm, and collected information of exporting process for dried apricot, apricot oil and kernel nut.</p> <p>During the processing workshop in October, the participants reviewed the grading and quality control methods. C/P took photos of sample dry apricots during the workshop and distributed the photos to the LSOs they worked with. C/P, core farmers and extension workers acquired basic quality standards and control methods.</p>
<p>1-6. Develop and disseminate the appropriate processing facilities, equipment and methods for dried apricots, apricot oil and kernel nuts through the extension officers and the core farmers.</p>	<p>The Project attempted to make several prototypes of sun dryers for apricot (house type, tunnel type, umbrella drier and improved triangular roof drier) in 2014. However, the Project has not finalized sun dryer yet since Japanese experts do not have a chance to stay in the GB Region in July and August, the harvesting season of apricot, and to conduct dry experiment in the target areas. The Project is scheduled to finalize drying equipment in 2015. As a result, core farmers improved the quality of their dried apricots.</p> <p>Also, the most of farmers acquired basic skills of grading dried apricots and kernel nuts</p> <p>The Project conducted several training sessions on general fruit processing in in-country and overseas survey trips. Training on apricot processing was done by contracted Pakistani local expert. Due to high potential demand for kernel nuts in overseas countries, the Project examined the amygdalin content of kernel nuts for export. There was a big difference in amygdalin content between examined in Pakistan (by Pakistan Council of Scientific & Industrial Research (PCSIR)) in 2014 and examined in Japan (by Nagano Prefecture General Industrial Technology Center) in 2013. It is necessary to reexamine the amygdalin content of kernel nuts.</p> <p>The Project introduced an oil extractor and provided guidance of oil extraction for the extracting machine to GOLD. The Project developed several training materials for oil extraction and promotes dissemination of oil extraction techniques with the training materials. The Project in collaboration with LSOs will start production of apricot jam for high value-added, utilizing unused apricot.</p>
<p>1-7. Promote the dried apricots and apricot oil in international and domestic markets in cooperation with the private organizations (e.g., branding, exhibition, certification, etc.).</p>	<p>The Project organizes and conducts market research survey in DCM (Islamabad and Lahore) every year since the commencement of the Project, where the Project and LSOs collect updated market information and negotiated business with sales agents. As a result, some supported farmers succeeded in exporting their dried apricots and walnuts through sales agent in Lahore. The Project organized exhibition opportunities for FOODX in Japan and SIAL Food Expo, 2014 in France, where the Project and private firms conducted marketing survey and business negotiation. As a result, some supported farmers and the local processor has succeeded in exporting dried apricot to Japan from 2013. In addition, the Project developed several training materials for apricot processing and promotes dissemination of apricot processing techniques with the training materials. Furthermore, the Project is making efforts in developing the regional brand for Hunza apricot products. The Project succeeded in designing the logo for the products. The Project developed the marketing strategy as well and the Project will develop marketing action plan in 2015 along with the strategy.</p>
<p>1-8. Develop the manuals of cultivation, processing and marketing for the extension officers and the farmers.</p>	<p>The Project is formulating manuals for cultivation, processing and marketing based on project activities. As of the mid-term review, the following topics and contents would be included:</p> <ul style="list-style-type: none"> - Fruit Thinning (Apricot) - Apple Cultivation Calendar - Organic Insect Repellent

	<ul style="list-style-type: none"> - (Bio-Insecticide)(Apple, Apricot) - Compost(Apple, Apricot) - Grafting and Budding(Apple, Apricot) - Mountain Micro-Organism Liquid (MML)(Apple, Apricot) - Lime sulfur mix and Bordeaux mix (Apple, Apricot) - Pruning(Apple, Apricot) - Dried Organic Apricot Method - Apricot Drying Brochure - Dry Apricot Processing - Kernel nuts Grading - Brochure of Apricot Oil Extraction - Overview of Market in DC - Overview of Markets for Apricot 2013 <p>Furthermore, the Project has a plan to formulate guidebook on apple and apricot cultivation and processing by the time of project termination. Currently, experts are conceptualizing its contents and editing strategy.</p>
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Output 2: Production and marketing of apples are improved.	
Project Activities	Actual Progress
2-1. Select the pilot areas and the core farmers.	Hunza-Nagar and Skardu are selected as a target and sub-target districts respectively. In 2012, six (6) pilot LSOs (RDO, GOLD, MLSO, RLSO, BRSO and HRSO) and two (2) core farmers for each pilot LSO were selected as the target LSOs. In April 2015, another three (3) pilot LSOs (MASO, GRSO and ARSO) were added as the additional target LSOs and two (2) core farmers for each pilot LSO were also selected so as to promote extension of skills and knowledge.
2-2. Introduce and disseminate the market research methods through the extension officers and the core farmers.	Through the market research, the prices of major types of apple in DC become clear. A couple of traders/buyers of fresh apple have been identified, the business relationship between these traders/buyers and farmers have been strengthened. The Project conducted the baseline survey in September 2012 and the mid-term survey in April 2015 for the target area (Hunza-Nagar and Skardu) to grasp the current situation of fruit production and marketing in the target area. The results of the mid-term survey will be finalized in the end of May 2015.
2-3. Identify the varieties suitable for high quality apple.	Red Delicious, Star King, and Golden Delicious were selected as superior varieties. In addition, Fuji, Tsugaru and Chiyuki, which are likely to be valued in the future, were officially introduced. The two DoA nurseries (Ghulmet and Murtazaabad), core-farmers, and participants in Training in Japan have multiplied and/or conduct graft propagation of the above varieties.
2-4. Disseminate the appropriate cultivation techniques (combination of early and late varieties, grafting, shoot training, pruning, thinning, harvesting, fertilization, etc.) through the extension officers and the core farmers.	Apple cultivation training was provided to DoA counterparts, LSO extension personnel, core-farmers, C/P training trainees and local seminar participants on grafting, fruit thinning, pruning, training, Bokashi, Mountain Micrograms Liquid (MML), BCL (insect repellent), organic fertilizer (Bordeaux mixture) in Japan and project target area. Many farmers of the target LSOs apply these techniques except for Pesticide application and Application of newly introduced organic fertilizer. . Many extension seminars were conducted by target LSOs.
2-5. Introduce and disseminate the standards of specifications and quality control methods for apples through the extension officers and the core farmers.	Training was conducted on quality standards and quality control methods. Farmers participated in training in Japan and/or market research in DC understood importance of quality standards. Apple grading chart is introduced for grading.
2-6. Develop and disseminate the appropriate grading and packaging methods for apples through the extension officers and the core farmers.	Post-harvest training was provided to DoA counterparts, core-farmers, C/P training trainees and local seminar participants on harvesting, sorting and packaging. In particular, the Project conducted training sessions on sorting and packaging in country specific training held in Japan and assigned the local expert in those areas. Skills and techniques of some famers in the target areas

	<p>including core farmers were improved and the quality of the apples in the apple market of Islamabad was evaluated as S3 grade from S1 grade. Some farmers started conducting these processes for themselves (see 2-8). Also, in 2014, some farmers succeeded in collectively harvesting, sorting, packaging and selling apples on their own.</p> <p>The Project has improved carton boxes for trial marketing year by year.</p>
<p>2-7. Promote the apples in international and domestic markets in cooperation with the private organizations (e.g., branding, exhibition, certification, etc.).</p>	<p>The Project organizes and conducts market research survey in DCM (Islamabad and Lahore) every year since the commencement of the Project, where the Project and LSOs collect updated market information and conducted trial sales in the local market. As a result, some supported farmers in the area where farmers had commonly sold their apples directly from their fruit fields succeeded in collectively harvesting, sorting, packaging apples and hiring a truck to deliver apples to Islamabad wholesale market. The Project succeeded in designing the logo for the products. The Project developed the marketing strategy as well and the Project will develop marketing action plan in 2015 along with the strategy.</p>
<p>2-8. Develop the manuals of cultivation, processing and marketing for the extension officers and the farmers.</p>	<p>The Project is formulating manuals for cultivation, processing and marketing based on the products for project activities. As of the mid-term review, the following topics and contents would be included:</p> <ul style="list-style-type: none"> - Fruit Thinning (Apple) - Apple Cultivation Calendar - Organic Insect Repellent - Bio-Insecticide (Apple and Apricot) - Compost (Apple and Apricot) - Grafting and Budding (Apple and Apricot) - Mountain Micro-Organism Liquid (MML)(Apple and Apricot) - Lime sulfur mix and Bordeaux mix (Apple and Apricot) - Pruning (Apple and Apricot) <p>Furthermore, the Project has a plan to formulate guidebook on apple and apricot cultivation and processing by the time of project termination. Currently, experts are conceptualizing its contents and editing strategy.</p>

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✓

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Annex 6: List of Training Materials

Date	Material Title	Number of copies	ISOs to which the materials were distributed
May, Jun 2013	Fruit Thinning (Apple)	300	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO
Jan 2015	Apple Cultivation Calendar	1000	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO
May, Jun 2013	Fruit Thinning (Apricot)	300	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO, MLSO
May, Jun 2013	Organic Insect Repellent (Bio-Insecticide)	300	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO
May, Jun 2013	Compost	300	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO
May, Jun 2013	Grafting and Budding	300	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO, MLSO
May, Jun 2013	Mountain Micro-Organism Liquid (MML)	300	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO
Apr 2015	Pruning	100	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO
May, Jun 2013	Dried Organic Apricot Method	30	GOLD, RDO
Jul 2013	Apricot Drying Brochure	30	GOLD, RDO
Oct 2013	Dry Apricot Processing	30	GOLD, RDO
Oct 2013	Kernel nuts Grading	50	GOLD, RDO
Oct 2013	Brochure of Apricot Oil Extraction	50	GOLD
Oct 2012	Overview of Market in DC	50	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO
Dec 2013	Overview of Markets for Apricot 2013	20	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO

Handwritten notes:
 A circled '0' is written to the left of the 'Dried Organic Apricot Method' row.
 The initials 'MM' and 'LD' are written vertically to the left of the 'Apricot Drying Brochure' and 'Dry Apricot Processing' rows respectively.

Annex 7: Questionnaire for Household Interview

(For apricot farmers)

Draft Questionnaire for Household Interview

(Baseline Survey for GB Fruits Project)

Date	<input type="text" value="2015/ /"/>
Village	<input type="text"/>
Mohara	<input type="text"/>
Household #	<input type="text"/>
Enumerator's Name	<input type="text"/>
	<input type="text"/>
Supervisor's Name	<input type="text"/>

Handwritten mark

Tick if you checked

Handwritten marks: a circle with a slash, and a signature 'Mun' with initials 'BP'.

I Household

Updated Apr 22nd, 2015

*Household is a group of people who stay together and share a common kitchen. Budget may consist of several sources of income.

A Name of the respondent

Male respondent	
Female respondent	

son of	
daughter of	

B Family name

C Telephone number of respondent

D Name of the family head

E What is the age and gender of the family head?

Age	
Male=1/Female=2	

F The number of other family members (who live in the house currently. Exclude members who live outside house)

Number of Family Member	Male	Female
Under 17 of age		
Ager of 18-59		
Over 60 of age		

II Education

A What is the educational background of the family head?

- No formal education =1
- Primary school =2
- Secondary school =3
- Higher secondary school =4
- Graduate =5
- Master's =6
- Ph.D =7
- Others (specify) =8

III Occupation and Major Source of Income

1st	2nd	3rd

A What is the major source of income of your household?

- Agriculture farming =1
- Livestock farming =2
- Agricultural labor =3
- Livestock labor =4
- Other labor (specify _____) =5
- Proving services (specify _____) =6

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Shop/Business	=7
Salaries from office work	=8
Land rent	=9
Room/building rent	=10
Remittance from family member out side of village	=11
Remittance from family member in foreign country	=12
Pension	=13
Other source (specify)	=14

IV Asset holding

A What are the areas of agricultural land for each type?

	Cultivated land	Marginal land	Barren land
Owned and self cultivated (by family members)			kanal
Owned and rented out to tenants			kanal
Rented from landowner			kanal

B Number of fruits and nuts trees

	Apple	Apricot	Cherry	Peach	Parsi-mmon	Pear	Walnut	Almond	Other (specify)	Other (specify)	Other (specify)
# of trees											

C Livestock

(Adult if livestock is 2 years or older)

1: Cattle

	Female		Male	
	Adult	Baby	Adult	Baby
Number				

2: Yaku

	Female		Male	
	Adult	Baby	Adult	Baby
Number				

3: Goat

	Female		Male	
	Adult	Baby	Adult	Baby
Number				

4: Sheep

	Female		Male	
	Adult	Baby	Adult	Baby
Number				

5: Chicken

Number	
--------	--

6: Other (sprcify

Number	
--------	--

7: Other (sprcify

Number	
--------	--

) 8: Other (sprcify

Number	
--------	--

V Fresh Apricot production and marketing

1 Area harvested for apricot

Area owned and self-cultivated		kanal
Area rented in		kanal
Area rented out		kanal

low
0
100
68

2 Number of trees owned by variety

Name of variety	Total # of trees	Total # of trees bearing fruits every year	# of young trees that do not bear fruits	# of trees bearing alternate fruits	
Nasi sil					number of trees
Sardi					number of trees
Kushilian					number of trees
Hashi					number of trees
Ali shahkaber					number of trees
Habie					number of trees
Jangeer					number of trees
Brumju					number of trees
Shikanda					number of trees
Ali shakhakas					number of trees
Alman					number of trees
Other (specify					number of trees
Other (specify					number of trees
Other (specify					number of trees

3 Total fresh apricot harvested last year

	Kg
	Number of trees (exclude trees that did not bear fruits last year)

% of fresh apricot affected by shot hole in the last year %

% wastage of fresh apricots **due to shot hole** (%) %

Total wastage of fresh apricots in the last year (%) %


4 Who did harvesting and grading of apricots last year

Harvest		Family member	=1
Grade		Buyer	=2
		Other (specify)=3

5 How did you harvest fresh apricots? And since which year have you practice that exercise?

(Multiple answers allowed)

	Put 1 if yes	Since which year have you exercised this practice?
Pick apricots by hand		
Drop them to the ground		
Put sheets on the ground		
Drop them to the trumporin		
Other (specify		

Image of trumporin → 

Handwritten notes and signatures:
 - A circle with a diagonal slash is drawn next to "Other (specify".
 - A signature "Anur" is written below the table.
 - The initials "LB" are written to the right of the signature.

6 What are the quantities and values of fresh apricots you sold **last year** and to whom did you sell (by buyer)

Kg	From how many trees?	Total Rs.	To whom

- Local trader =1
- Trader in down country =2
- Local Market (wholesalers) =3
- Local Market (retailers) =4
- Down Country Market (wholesalers) =5
- Down Country Market (retailers) =6
- Other (specify) =7

7 What are the major problems you face in the apricot production and marketing?

1st	2nd

- Lack information on good varieties =1
- Diseases =2
- Insects =3
- Lack of technique/skill (specify if any) =4
- Labor shortage =5
- Land shortage =6
- Seedlings of good varieties are not available =7
- Other (specify) =8

8 Annual costs for fresh apricot production and marketing last year

Nursery plant		Rs.
Chemical fertilizer		Rs.
Organic fertilizer		Rs.
Pesticide		Rs.
Water charges		Rs.
Hired labor (pay in cash)		Rs.
Hired labor (pay in kind)		kg
Harvesting cost		Rs.
Packages		Rs.
Transportation cost		Rs.
Others ()		Rs.

→ Average daily wage		Rs./day
→ Kind of crop		

VI Technique for apricot production

1 Grafting

a) Have you done grafting since 2013?

Yes Put "1" if yes. Put "Don't know", if he does not know.

b) Have you or your family member attended the training (by JICA, DoA, and LSO) on grafting since 2013?

Yes Put "1" if yes. Put "Don't know", if he does not know.

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If answer is yes, continue to ask the following questions. If answer is no, go to question d).

c) Do you do grafting in the way taught by the training?

Yes Put "1" if yes. Put "Don't know", if he does not know.

If no, what is the reason for not doing it?

d) In which way do you do grafting in the last time? Please choose from the picture (1).
In which year did you do grafting in the last time?

A	B	C	Other (specify)

 Put 1 for the choice Year _____

e) Since which year have you applied the grafting method selected in (d)

Year _____

2 Pruning

a) Have you or your family member attended the training (by JICA, DoA, and LSO) on pruning since 2013?

Yes Put "1" if yes. Put "Don't know", if he does not know.

If answer is yes, continue to ask the following questions. If answer is no, go to question c).

b) Do you do pruning in the way taught by the training?

Yes Put "1" if yes. Put "Don't know", if he does not know.

If no, what is the reason for not doing it?

c) Have you done pruning every year since 2013?

Yes Put "1" if yes. Put "Don't know", if he does not know.

d) Which equipment do you use for pruning?

Ax	Saw	Other (specify)

 Put 1 for the choice

e) Please look at the picture (2) and tell us which form of tree is better for fruits production?

Also, please give us the reason why you choose A or B?

[Handwritten signatures and marks]

3 Did you do flower or fruit thinning last year?

Yes	<input type="checkbox"/>
-----	--------------------------

4 Fertilizer: Have you put fertilizer to apricot trees in the last 12 months? If so, what kind of fertilizer did you apply?

a) Applied fertilizer

Yes	<input type="checkbox"/>
-----	--------------------------

Put 1 if yes, otherwise leave it blank

b) Kind of fertilizer (*put 1 for the choice*)

Manure	Chemical Fertilizer	Bokashi	MML	Other (specify)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5 Pesticide and repellent: Have you applied chemical pesticide and/or non-chemical repellent to apricot trees last year?

	Yes	<i>Put 1 if yes, otherwise leave it blank</i>
BCL	<input type="checkbox"/>	
MML	<input type="checkbox"/>	
Chemical pesticide	<input type="checkbox"/>	
Other(specify)	<input type="checkbox"/>	

6 Rootstock management

a) Have you or your family member attended the training (by JICA, DoA, and LSO) on rootstock management since 2013?

Yes

<input type="checkbox"/>

Put "1" if yes. Put "Don't know", if he does not know.

b) Do you have young trees (5 years old or less)? If yes, please

Yes

<input type="checkbox"/>

Put 1 if yes, otherwise leave it blank

c) Do you prune the young trees (5 years old or less)?

Yes

<input type="checkbox"/>

Put 1 if yes, otherwise leave it blank

d) Do you provide water to young trees (5 years old or less)?

Yes

<input type="checkbox"/>

Put 1 if yes, otherwise leave it blank

e) Do you use sucker for rootstock?

Yes

<input type="checkbox"/>

Put 1 if yes, otherwise leave it blank

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VII Apricot Products

A Dried apricot

1 Quantity of dried apricot production last year

	Made from your own fresh apricots	Bought fresh apricots from others	
Before drying			Kg
After drying			Kg

2 If you bought fresh apricots to dry, how much did you pay. And from whom you bought?

<input type="text"/> Rs.	From whom you bought?	<input type="text"/>	Trader	=1
			Relative	=2
			Neighbor	=3
			Other (specify)	=4

3 How much % of dried apricots is wasted during the processing stage? %

4 What are the quantities and values of dried apricots sold last year? Specify by style, color, variety, and sulfuring.

Style (Turkish, Opend, guli, etc)	Color	Variety name (Habi, Ali sha kakas etc)	Sulphered (Y or N)	Quantity sold (Kg)	Total Value Sold (Rs.)	Price per Kg	To whom you sold	If sold to processor, please specify.

- | | | | |
|----------------------------|----|---------------------------------|----|
| Local trader | =1 | Down Country Market (wholesale) | =5 |
| Trader in down country | =2 | Down Country Market (retailers) | =6 |
| Local Market (wholesalers) | =3 | For export | =7 |
| Local Market (retailers) | =4 | Other (specify) | =8 |

5 Have you or your family member attended the training (by JICA, DoA, and LSO) on the following topics since 2013?

And do you do these exercise in the way taught by the training?

Also, if you do not do in the way taught by training, what is the reason?

	Put 1 if attended	Put 1 if you exercise in the way taught by training (if he did not attend	Reason for not doing it in the way taught by training (if he did not attend training, skip this question)
Harvest			
Drying			
Grading			

Handwritten signatures and marks are present below the table.

6 How did you dry apricot last year? And since when have you use this equipment?
 Also, how did you get the equipment? (if given by any institution, please specify).

Dry on the stone
 Plastic tray
 Use willow
 Use wooden tray
 Use solar tunnel

Put 1 if yes	Since which year have you used this equipment?	How did you get the equipment	Specify the institution, if it is given

Given by some institution =1
 Bought by yourself =2
 Made by yourself =3

7 Did you grade dried apricots? If so, how did you grade?

If yes, put 1

Graded dried apricot last year _____

How did you grade dried apricot? (Multiple answers allowed)

If yes, put 1

By color	
By size	
By variety	
By level of maturity	
By level of damage	
Other (specify _____)	

8 Did you do the following during the process of dried apricots? If yes, since which year have you been doing it?

	<i>If yes, put 1</i>	<i>Since which year have you been doing</i>
Wash fresh apricot before drying it	_____	_____
Wash hands before you cut fresh apricots	_____	_____
Use knife when cutting fresh apricots	_____	_____
Wear mask when processing	_____	_____
Wear globes when processing	_____	_____
Wear cap when processing	_____	_____
Take off accessories	_____	_____
Wash trays before drying	_____	_____

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9 Costs for dried apricot production last year

		Total costs	Average lasting time (year)
Equipment	Willow		
	Wooden tray		
	Rack		
	Plastic cover for fumigation		
	Solar house		
	Others (specify)		
	Others (specify)		
	Others (specify)		
Runnning costs	Sulfer		/
	Fuel		
	Trasportataion costs from field		
	Hiring labor (cash)		
	Hiring labor (in kind)		
	Food for labor		
	Others (specify)		
	Others (specify)		
	Others (specify)		

10 Cost for marketing dried apricots last year

Packages		Rs.
Transportation costs		Rs.
Other costs (specify)		Rs.
Other costs (specify)		Rs.

11 How do you store dried apricots? (Miltiple answers are allowed)

Put 1 if yes

In willow basket	
In container	
In pastic bag	
Other (specify)	

12 What are the major problems you face in the dried apricot processing?

	1st	2nd
Weather		
Lack of technique/skill (specify if any		
Labor shortage		
Lanck of equipment (specify if any		
Other (specify)		

Weather =1
Lack of technique/skill (specify if any) =2
Labor shortage =3
Lanck of equipment (specify if any) =4
Other (specify) =5

Wet / Lack of technique / Labor shortage

13 What are the major problems you face in the dried apricot marketing?

1st	2nd

- Transportation problem (road blockage etc) =1
- Cost of transportation to down country =2
- Lack of market informaion in down country and local process (Mountain fruits, MSA etc) =3
- Low selling prices to buyers =4
- Lack of storage facilities/technique =5
- Labor shortage for harvesting and grading =6
- Other (specify) =7

B Apricot kernel

1 How much apricot kernel did self-consume and sell last year?

		Quantity Self-consumed (kg)	Quantity Sold (kg)	Value Sold (Rs)	To whom you sold?
With shell	Sweet kernel				
	Bitter kernel				
Without shell	Sweet kernel				
	Bitter kernel				

- Local trader =1
- Trader in down country =2
- Local Market (wholesalers) =3
- Local Market (retailers) =4
- Down Country Market (wholesale =5
- Down Country Market (retailers) =6
- Other (specify) =7

2 How did you crush the shells of kernel?

If yes, put 1

By crushing machine _____

By stone _____

Other (specify) _____

Handwritten marks: a checkmark, a circle with a diagonal line, and the initials 'M B'.

3 Production costs for apricot kernel (deshelling) last year

		Total costs	Average lasting time (year)
Equipment	Kernel cracker		
	Others (specify)		
	Others (specify)		
	Others (specify)		
Runnning costs			/

4 Cost for marketing apricot kernel last year

Packages		Rs.
Transportation costs		Rs.
Other costs (specify)		Rs.
Other costs (specify)		Rs.

5 What are the major problems you face in the apricot kernel production?

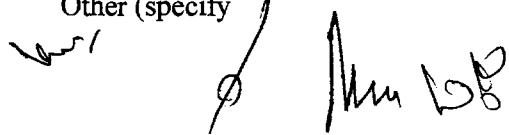
1st	2nd

- Lack of technique/skill (specify if any) =1
- Labor shortage =2
- Lack of equipment (specify if any) =3
- Other (specify) =4

6 What are the major problems you face in the apricot kernel marketing?

1st	2nd

- Transportation problem (road blockage etc) =1
- Cost of transportation to down country =2
- Lack of market informaion in down country and local process (Mountain fruits, MSA etc) =3
- Low selling prices to buyers =4
- Lack of storage facilities/technique =5
- Labor shortage for harvesting and grading =6
- Other (specify) =7

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C Apricot oil

1 How much apricot oil did you produce, self-consume, and sell last year?

	Quantity Produced (liter)	Quantity Self-consumed (liter)	Quantity Sold (liter)	Value Sold (Rs)	To whom you sold?
Sweet kernel					
Bitter kernel					

- Local trader =1
- Trader in down country =2
- Local Market (wholesalers) =3
- Local Market (retailers) =4
- Down Country Market (wholesalers) =5
- Down Country Market (retailers) =6
- Other (specify) =7

2 Production costs for apricot oil last year

		Total costs	Average lasting time (year)
Equipment	Apricot oil extractor		
	Filter		
	Others (specify)		
	Others (specify)		
Running costs			/

3 Cost for marketing apricot oil last year

Packages		Rs.
Transportation costs		Rs.
Other costs (specify)		Rs.
Other costs (specify)		Rs.

4 What are the major problems you face in the apricot oil production?

1st	2nd

- Lack of technique/skill (specify if any) =1
- Labor shortage =2
- Lack of equipment (specify if any) =3
- Other (specify) =4

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5 What are the major problems you face in the apricot oil marketing?

1st	2nd

- Transportation problem (road blockage etc) =1
- Cost of transportation to down country =2
- Lack of market information in down country and local process (Mountain fruits, MSA etc) =2
- Low selling prices to buyers =3
- Lack of storage facilities/technique =4
- Labor shortage for harvesting and grading =5
- Other (specify) =6

6 Working hours of your family members for fresh apricot, dried apricot, apricot kernel and apricot oil production and marketing last year

Fresh apricot		Dry apricot		Apricot kernel		Apricot oil	
Family member (code)	Total working hours last year	Family member (code)	Total working hours last year	Family member (code)	Total working hours last year	Family member (code)	Total working hours last year

- Male, over 18 years of age =1
- Female, over 18 years of age =3
- Male, under 18 years of age =2
- Female, under 18 years of age =4

D Other apricot products

1 Have you or your family member attended the training for making apricot jam, juice, and/or concentrate given by DoA last year?

Yes Put 1 if yes, otherwise leave it blank
 If the answer is yes go to question 2, otherwise skip question 2.

2 Have you made these products at home in the way taught in the training?

Yes Put 1 if yes, otherwise leave it blank

If no, what is the reason? _____

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VII Other

1 Do you do any cooperative works with other farmers?

Put 1 if yes

Collective purchase of inputs	<input type="checkbox"/>	→ What input ?	<input type="text"/>
Harvest	<input type="checkbox"/>	→ Which product?	<input type="text"/>
Marketing	<input type="checkbox"/>	→ Which product?	<input type="text"/>
Processing	<input type="checkbox"/>	→ Which product?	<input type="text"/>
Grading	<input type="checkbox"/>	→ Which product?	<input type="text"/>
Packing	<input type="checkbox"/>	→ Which product?	<input type="text"/>
Other (specify)	<input type="text"/>		

Yes

Yes *Yes* *Yes*

(For apple farmers)

Questionnaire for Household Interview

(Baseline Survey for GB Fruits Project)

Date

2015/ /

Village

Mohala

Household #

Enumerator's Name

Supervisor's Name

hnr
Amr Tick if you checked

I Household

Updated Apr 22nd, 2015

*Household is a group of people who stay together and share a common kitchen. Budget may consist of several sources of income.

A Name of the respondent

Male respondent	
Female respondent	

son of	
daughter of	

B Family name

C Telephone number of respondent

D Name of the family head

E What is the age and gender of the family head?

Age	
Male=1/Female=2	

F The number of other family members (who live in the house currently. Exclude members who live outside house)

Number of Family Member	Male	Female
Under 17 of age		
Ager of 18-59		
Over 60 of age		

II Education

A What is the educational background of the family head?

- No formal education =1
- Primary school =2
- Secondary school =3
- Higher secondary school =4
- Graduate =5
- Master's =6
- Ph.D =7
- Others (specify) =8

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III Major Source of Income

	1st	2nd	3rd
A What is the major source of income of your household?			
Agriculture farming	=1		
Livestock farming	=2		
Agricultural labor	=3		
Livestock labor	=4		
Other labor (specify _____)	=5		
Providing services (specify _____)	=6		
Shop/Business	=7		
Salaries from office work	=8		
Land rent	=9		
Room/building rent	=10		
Remittance from family member outside of village	=11		
Remittance from family member in foreign country	=12		
Pension	=13		
Other source (specify _____)	=14		

IV Asset holding

A What are the areas of agricultural land for each type?

	Cultivated land	Marginal land	Barren land
Owned and self cultivated (by family members)			kanal
Owned and rented out to tenants			kanal
Rented from landowner			kanal

B Number of fruits and nuts trees

	Apple	Apricot	Cherry	Peach	Parsi-mmon	Pear	Walnut	Almond	Other (specify)	Other (specify)	Other (specify)
# of trees											

C Livestock

(Adult if livestock is 2 years or older)

1: Cattle

	Female		Male	
	Adult	Baby	Adult	Baby
Number				

2: Yak

	Female		Male	
	Adult	Baby	Adult	Baby
Number				

3: Goat

	Female		Male	
	Adult	Baby	Adult	Baby
Number				

4: Sheep

	Female		Male	
	Adult	Baby	Adult	Baby
Number				

5: Chicken

Number	
--------	--

6: Other (specify)

Number	
--------	--

7: Other (specify)

Number	
--------	--

8: Other (specify)

Number	
--------	--

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 A signature that appears to be "M. V. B." followed by a flourish.

V Apple production and marketing

1 Area harvested for apple production

Area owned and self-cultivated		kanal
Area rented in		kanal
Area rented out		kanal

2 Number of trees cultivated by variety

Name of variety	Total # of trees	Total # of trees bearing fruits every year	# of young trees that do not bear fruits yet	# of trees bearing alternate fruits	
Golden delicious					number of trees
Red delicious					number of trees
Starking delicious					number of trees
Starkrimson delicious (five star)					number of trees
Double red					number of trees
Discovery					number of trees
Granny smith					number of trees
Noor shah					number of trees
Goharn aman					number of trees
Fuji					number of trees
Tsugaru					number of trees
Other (specify					number of trees
Other (specify					number of trees
Other (specify					number of trees
Other (specify					number of trees

3 Total apple production in the last year Kg
 Number of trees (exclude trees that did not bear fruits last year)

4 Who did harvesting and grading of apples last year

Harvest	<input type="text"/>	Family member	=1
Grade	<input type="text"/>	Buyer	=2
		Other (specify)	=3

5 What are the quantites of apples you sold **last year** and to whom did you sell (by buyer)
 Also, the sales was done by individually or collectively with other farmers?

Kg	From how many trees?	Rs.	To whom	Put 1 if collective

Local trader =1
 Trader in down country =2
 Local Market (wholesalers) =3
 Local Market (retailers) =4
 Down Country Market (wholesale =5
 Down Country Market (retailers) =6
 Other (specify) =7

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6 How many buyers/bidders came to bid your apples last year?

7 In case that you sold whole orchard to one buyer last year, how much was the lowest and highest bid?

Highest bid	<input type="text"/>	Rs.
Lowest bid	<input type="text"/>	Rs.

8 How do you store apples? (multiple answers allowed)

Put 1 if yes. If he does not store apple, leave it blank.

	<i>For self-consumption</i>	<i>For sale</i>
Containers/boxes	<input type="text"/>	<input type="text"/>
Store rooms	<input type="text"/>	<input type="text"/>
In the ground	<input type="text"/>	<input type="text"/>
Dry	<input type="text"/>	<input type="text"/>
Make powder	<input type="text"/>	<input type="text"/>
Refrigerate	<input type="text"/>	<input type="text"/>
Other (specify)	<input type="text"/>	<input type="text"/>

9 What are the major problems you face in the apple production and marketing? Choose major 3 problems

1st	2nd	3rd
<input type="text"/>	<input type="text"/>	<input type="text"/>

Production

- Lack information on good varieties =1
- Deseases =2
- Insects =3
- Lack of technique/skill (specify if any) =4
- Labor shortage =5
- Land shortage =6
- Seedlings of good varieties are not available =7
- Other (specify) =8

Maketing

- Transportation problem (road blockage etc) =9
- Cost of transportation to down country =10
- Lack of market informaion in down country =11
- Low selling prices to buyers =12
- Lack of storage facilities/technique =13
- Labor shortage for harvesting and grading =14
- Other (specify) =15

Other (specify

=16

VI Technique for apple production

1 Grafting

a) Have you done grafting since 2013?

Yes Put "1" if yes. Put "Don't know", if he does not know.

b) Have you or your family member attended the training (by JICA, DoA, and LSO) on grafting since 2013?

Yes Put "1" if yes. Put "Don't know", if he does not know.

If answer is yes, continue to ask the following questions. If answer is no, go to question d).

c) Do you do grafting in the way taught by the training?

Yes Put "1" if yes. Put "Don't know", if he does not know.

If no, what is the reason for not doing it?

d) In which way do you do grafting in the last time? Please choose from the picture (1).
In which year did you do grafting in the last time?

A	B	C	Other (specify)

Put 1 for the choice
Year _____

e) Since which year have you applied the grafting method selected in (d)

Year _____

2 Pruning

a) Have you or your family member attended the training (by JICA, DoA, and LSO) on pruning since 2013?

Yes Put "1" if yes. Put "Don't know", if he does not know.

If answer is yes, continue to ask the following questions. If answer is no, go to question c).

b) Do you do pruning in the way taught by the training?

Yes Put "1" if yes. Put "Don't know", if he does not know.

If no, what is the reason for not doing it?

c) Have you done pruning every year since 2013?

Yes Put "1" if yes. Put "Don't know", if he does not know.

d) Which equipment do you use for pruning?

Ax	Saw	Other (specify)

Put 1 for the choice

Handwritten marks: checkmarks and signatures below the equipment table.

e) Please look at the picture (2) and tell us which form of tree is better for fruits production?
 Also, please give us the reason why you choose A or B?

3 Did you do flower or fruit thinning last year?

Yes

4 Fertilizer: Have you put fertilizer to apple trees in the last 12 months? If so, what kind of fertilizer did you apply?

a) Applied fertilizer Yes Put 1 if yes, otherwise leave it blank

b) Kind of fertilizer (put 1 for the choice)

Manure	Chemical Fertilizer	Bokashi	MML	Other (specify)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5 Pesticide and repellent: Have you applied chemical pesticide and/or non-chemical repellent to apple trees last year?

	Yes	Put 1 if yes, otherwise leave it blank
BCL	<input type="checkbox"/>	
MML	<input type="checkbox"/>	
Chemical pesticide	<input type="checkbox"/>	
Other(specify)	<input type="checkbox"/>	

6 Rootstock management

a) Have you or your family member attended the training (by JICA, DoA, and LSO) on rootstock management since 2013?

Yes Put "1" if yes. Put "Don't know", if he does not know.

b) Do you have young trees (5 years old or less)? If yes, please

Yes Put 1 if yes, otherwise leave it blank

c) Do you prune the young trees (5 years old or less)?


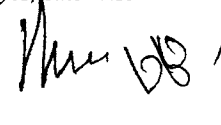
Yes Put 1 if yes, otherwise leave it blank

d) Do you provide water to young trees (5 years old or less)?

Yes Put 1 if yes, otherwise leave it blank

e) Do you use sucker for rootstock?

Yes Put 1 if yes, otherwise leave it blank

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VII Costs and working hours for apple production

1 Annual costs (cash expenses) for apple production and marketing in the last year

Nursery plant		Rs.	
Chemical fertilizer		Rs.	
Organic fertilizer		Rs.	
Pesticide		Rs.	
Water charges		Rs.	
Hired labor		Rs.	→ Average daily wage <input type="text"/> Rs./day
Harvesting cost		Rs.	
Packages		Rs.	
Transportation cost		Rs.	
Others ()		Rs.	

2 Working hours of your family members for apple production and marketing last year (including managerial and administrative work)

Family member (code)	Total working hours last year

Male, over 18 years of age =1 *Female, over 18 years of age* =3
Male, under 18 years of age =2 *Female, under 18 years of age* =4

VIII Other

Do you do any cooperative works with other farmers?

Put 1 if yes

Collective purchase of input	<input type="checkbox"/>	→ What input ?	<input type="text"/>
Harvest	<input type="checkbox"/>	→ Which product?	<input type="text"/>
Marketing	<input type="checkbox"/>	→ Which product?	<input type="text"/>
Processing	<input type="checkbox"/>	→ Which product?	<input type="text"/>
Grading	<input type="checkbox"/>	→ Which product?	<input type="text"/>
Packing	<input type="checkbox"/>	→ Which product?	<input type="text"/>
Other (specify)	<input type="checkbox"/>		<input type="text"/>

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Annex 8: List of JCC and PMM

1. List of Joint Coordination Committee (JCC)

No.	Year	Date	Venue	Number of Attendants						Agenda
				DoA	Private firm, NGO and ISO	Japanese Experts	Embassy of Japan	HCA	Total	
1	2012	October, 9	Gilgit	9	4	5	0	2	20	<ul style="list-style-type: none"> • Overview of the Project • Counterpart staff • Target Project Area • Security Arrangement
2	2013	April, 22	Gilgit	10	4	6	0	1	21	<ul style="list-style-type: none"> • Review and plan of the Project • Discussion on the capacity of the DoA nurseries, project scope, project monitoring, the Project budget for DoA by the Pakistani Government and the Project office in Hunza-Nagar.
3	2014	October, 30	Islamabad	10 (1)	4	1	1	3	19 (1)	<ul style="list-style-type: none"> • Project Outline • Achievement in the 1st and 2nd year and key activities in the 3rd year • Plan of the 3rd year and its progress • Issues and challenges • Revision of PDM

(Note) The number enclosed in parentheses indicates the number of women attended.

2. List of Project Management Meeting (August 2013 - December 2014)

No.	Year	Date	Venue	Number of Attendants						Agenda
				DoA	Private firm, NGO and ISO	Japanese Experts	Embassy of Japan	HCA	Total	
1	2013	August, 15	Islamabad	3	0	1	0	0	4	<ul style="list-style-type: none"> • Progress of the Project • Activities from now up to the next spring
2	2013	October, 2	Islamabad	2	0	1	0	0	3	<ul style="list-style-type: none"> • Activities from now up to the next spring • Activities the next cropping season • Information sharing from DoA
3	2013	December, 19	Lahore	3	0	1	0	0	4	<ul style="list-style-type: none"> • Progress of the Project • Activities from now up to the next spring • Activities the next cropping season • Information sharing from DoA

4	2014	February, 28	Islamabad	3	0	1	0	0	4	<ul style="list-style-type: none"> •Progress of the Project •Activities from now up to the next spring •Activities the next cropping season
5	2014	May, 28	Islamabad	3	0	1	0	0	4	<ul style="list-style-type: none"> •Progress of the Project •Assigned tasks to DoA counterparts •Activity plan of the 3rd project year
6	2014	August, 27	Islamabad	10	0	3	0	1	14	<ul style="list-style-type: none"> •Progress of the Project •Activities to be implemented from now in this year •Activities from now up to the next spring
7	2014	October, 31	Islamabad	9 (1)	0	4	0	0	13 (1)	<ul style="list-style-type: none"> •Progress of the Project •Activities from now up to the next spring
8	2014	December, 20	Islamabad	4	0	1	0	0	5	<ul style="list-style-type: none"> •Progress of the Project •Activities from now up to the next spring

(Note) The number enclosed in parentheses indicates the number of women attended.

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Annex 9: List of Training Trained by Local Expert

No.	Year	Training Course Title	Place	Lecturers / Training institutes	Period		DoA		Number of trainee				Total		
					From	To	M	F	Farmer/LSO		Private firm			M	F
									M	F	M	F			
1	2012	Grading and packing of apples	Hunza-Nagar	Mushtaq Brother Co, Apple trader	2012/10/25	2012/10/25	1	0	45	0	0	0	46	0	46
2	2013	Grading and packing of apples	Hunza-Nagar	Ajab Gull, Fruit trader	2013/9/24	2013/9/28	7	0	36	185	0	0	43	185	228
3	2014	Apricot processing	Aliabad	Mr. Zulfiqar Ali Ghazi, local expert	2014/8/1	2014/8/6	0	0	34	182	0	0	34	182	216
4	2014	Grading and packing of apples	Hunza-Nagar	Ajab Gull, Fruit trader	2014/9/22	2014/9/28	18	4	79	220	0	0	238	83	321
5	2014	Extension skill	Islamabad	ECI (Pvt) Ltd	2014/12/15	2014/12/20	2	1	9	0	0	0	11	1	12
6	2015	Extension skill	Gilgit	ECI (Pvt) Ltd	2015/6/1	2015/6/5	3	0	16	2	0	0	19	2	21
Total							31	5	219	589	0	0	391	453	844
Grand Total							36		808		0		844		

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Annex 10: Seminar in the Project Site

No.	Year	Title of Seminar / Training	Place	Period			Number of Trainees								
				From	To	Duration	DoA		Farmer/LSO		Private firm		M	F	Total
							M	F	M	F	M	F			
1	2012	Apricot Cultivation	Core farmer's orchard, Aliabad	2012/10/22	2012/10/22	1	2	1	5	12	0	0	7	13	20
2	2012	Apple Cultivation	Core farmer's orchard, Hyderabad, PTDC Motel Hunza, Trader's field, Aliabad	2012/10/25	2012/10/25	1	3	2	22	3	0	0	25	5	30
3	2012	Marketing & Fruit Processing	PTDC Motel Hunza	2012/10/30	2012/10/30	1	6	1	21	20	2	0	29	21	50
4	2013	Return Workshop on Pruning and Grafting Training, Japan in Hunza-Nagar	Hunza Embassy, Karimabad	2013/3/30	2013/3/30	1	5	2	34	10	0	0	39	12	51
5	2013	Fruits Marketing Seminar Report on Marketing Exposure and Training in Japan and Workshop	Hunza Embassy, Karimabad	2013/4/13	2013/4/13	1	10	1	34	14	9	0	53	15	68
6	2013	JICA-DoA Fruit Seminar April 2013 Report & Demonstration on the Result of Training in Japan -Pruning, Grafting, and Marketing	Mehdiabad, Skardu	2013/4/18	2013/4/18	1	8	0	32	0	0	0	40	0	40
7	2013	Seminar of Organic Fertilizer and Insect Repellent	Dilan Guest House, Minapin-Nagar	2013/4/27	2013/4/27	1	4	0	72	0	0	0	76	0	76
8	2013	Organic Agriculture and Thinning Fruits Seminar	Golden Jubilee LSO office yard, Baltit Inn, Karimabad	2013/5/11	2013/5/11	1	4	1	11	66	4	0	19	67	86
9	2013	Return Seminar (Cultivation) by the 2nd session Trainees of the Japan Training	PTDC Motel Hunza, Fazal Karim's orchard in Karimabad	2013/6/14	2013/6/14	1	15	1	39	62	4	0	58	63	121
10	2013	Seminar: Report on Marketing Training in Japan by the 2nd session Trainees	Hunza Embassy, Karimabad	2013/6/24	2013/6/24	1	8	2	13	24	5	0	26	26	52

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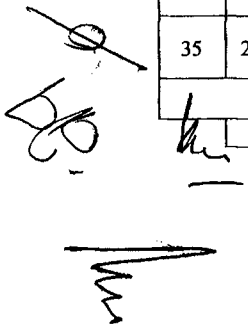
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11	2013	Return Seminar by the 2nd and 3rd session Trainees of the Japan Training	DoA Nursery	2013/8/1	2013/8/1	1	11	0	42	0	0	0	53	0	53
12	2013	Return Seminar (Cultivation) by the 3rd session Trainees of the Japan Training	PTDC Motel Hunza	2013/8/5	2013/8/5	1	7	1	24	45	1	0	32	46	78
13	2013	Return Workshop on Farmers Exposure Visit to Swat in Hunza Naga	Hunza Nagar	2013/11/20	2013/11/21	2	21	4	84	51	14	0	119	55	174
14	2014	Return Workshop on Apricot Market Survey Lahore, in Hunza-Nagar	Hunza Embassy Hotel	2014/1/20	2014/1/20	1	11	2	44	45	7	0	62	47	109
15	2014	Return Seminar on Food-Ex 2014 Japan, in Hunza Nagar	Hunza Embassy Hotel	2014/2/5	2014/2/5	1	7	2	44	37	2	0	53	39	92
16	2014	Return Workshop on Apricot Market Survey Lahore, Skardu	Mehdiabad LSO	2014/2/10	2014/2/10	1	6	0	34	0	0	0	40	0	40
17	2014	Return Seminar on Apple Cultivatioon-1 Japan, in Hunza-Nagar	Hunza Embassy Hotel	2014/9/5	2014/9/6	2	18	4	62	78	14	0	94	82	176
18	2014	Return Seminar on Apricot Cultivatioon-1 Japan, in Skardu	Mehdiabad LSO	2014/9/18	2014/9/18	1	16	0	41	0	0	0	57	0	57
19	2014	Post harvesting training of Apple through Agriculture department Hunza Nagar	Minapin, Nasirabd, Aliabad, Hyderabad, Karimabad, Garelt, Khan altit	2014/9/22	2014/9/28	7	18	4	79	220	0	0	97	224	321
20	2014	Return Seminar on Market Survey in Down Market, Food Processing Training in Thailand, SIAL Pairs Expo	Mehdiabad LSO	2014/11/29	2014/11/29	1	8	0	27	0	0	0	35	0	35
21	2014	Return Seminar on SIAL Paris Food Expo, 2014 in Hunza-Nagar	Hunza Embassy Hotel	2014/12/3	2014/12/3	1	6	2	34	43	3	0	43	45	88
22	2014	Return Seminar on Apple & Apricot Market Survey in Hunza-Nagar & Skardu	Hunza Embassy Hotel	2014/12/3	2014/12/3	1	15	2	31	36	4	0	50	38	88
23	2014	Return Seminar on Advance Marketing in Hunza-Nagar	Hunza Embassy Hotel	2014/12/4	2014/12/4	1	18	2	49	51	9	0	76	53	129
24	2014	Return Seminar on Apple Cultivatioon-2 in Hunza-Nagar	Hunza Embassy Hotel	2014/12/11	2014/12/11	1	8	2	35	41	2	0	45	43	88

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25	2014	Return Seminar on Agriculture Extension Skill Training in Islamabad (ECI), in Skardu, Mehdiabad	Mehdiabad LSO	2014/12/29	2014/12/29	1	4	0	33	0	0	0	37	0	37
26	2015	Return Seminar on Agriculture Extension Skill Training in Islamabad (ECI), in Hunza-Nagar	Hunza Embassy Hotel	2015/1/5	2015/1/5	1	8	2	42	33	4	0	54	35	89
27	2015	Seminar on young tree management	LSO GOLD	2015/4/15	2015/4/15	1	2	2	31	26	0	0	33	28	61
28	2015	Seminar on young tree management	RDO	2015/4/15	2015/4/15	1	2	0	23	0	0	0	25	0	25
29	2015	Seminar on grafting and sulfur-lime mixture	Hunza Serena inn, HRSO	2015/4/16	2015/4/17	2	3	1	18	41	0	0	21	42	63
30	2015	Seminar on grafting and sulfur-lime mixture	RLSO	2015/4/21	2015/4/21	1	3	0	68	0	0	0	71	0	71
31	2015	Seminar on grafting, fruit thinning, and processing	DoA Nursery, Mehdiabad	2015/4/25	2015/4/25	1	3	0	22	6	0	0	25	6	31
32	2015	Seminar on MML, BCL, Boudreaux mixture, Bokashi	LSO GOLD	2015/4/28	2015/4/28	1	4	2	76	43	10	0	90	45	135
33	2015	Seminar on grafting, MML, BCL, sulfur-lime mixture, Boudreaux mixture, Bokashi	MASO	2015/4/30	2015/5/1	2	5	0	45	88	0	0	50	88	138
34	2015	Seminar on Thinnng, BCL.sufur -lime and light trape	RLSO	2015/5/12	2015/5/12	1	6	0	39	0		0	45	0	45
35	2015	Semainr on Thinnng, BCL.sufur -lime and light trape	ARSO	2015/5/19	2015/5/19	1	15	2	51	85	3	0	69	87	156
Total						45	290	45	1,361	1,180	97	0	1,748	1,225	2,973
Grand total							335		2,541		97		2,973		



Annex 11: Proposed Project Design Matrix (PDM)

<p>Title of the Project: Promotion of Value Added Fruit Products in Gilgit-Baltistan, Pakistan Term of Cooperation: 4 years from the arrival of the Japanese expert(s) Project Area: Gilgit-Baltistan Target Group: The farmers in the Project Area (* Pilot LSOs: BRISO, HRISO, LSO GOLD, RDO, RLISO, MASO, ARSO and GRISO) Implementing Organization: Department of Agriculture (DoA)</p>	<p>PDM-1 (Ver: 1) was prepared on 2011/07/19 PDM-1 (Ver: 2) was prepared on 2014/10/30 PDM-1 (Ver: 3) was prepared on 2015/06/26</p>
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Narrative Summary	Verifiable Indicators	Means of Verification	Importance Assumption
<p>Overall Goal Production and marketing of apricot products and apples are improved in the project area</p>	<p>Sale amount of dried apricots and apples in Hunza-Nagar district in 2016 is increased more than 15% in 2018.</p>	<p>Gilgit-Baltistan Agriculture Statistics Survey Report</p>	
<p>Project Purpose Production and sales of high quality apricot products and apples are increased in the pilot areas.</p>	<p>1. Total quantity of A-graded dried apricots which are produced by the farmers in the project sites (the sub-villages where the core farmer reside) is increased by 15%. (A-graded dried apricots will be determined every year based on the result of interviews with farmers and traders. Unit prices of A-graded dried apricot are 120 PKR/Kg for opened style and PKR180/Kg for Turkish Style and Guli in the first year.) (Total sales volume was 1,350Kg (221 sample households) in the first year) 2. Apricot kernels and kernel products which are produced by the farmers in the pilot LSOs is exported. (Total sales volume in PKR in the first year will be collected at the and baseline survey.) 3. 80% of apples sold at Rawalpindi wholesale market through marketing research are graded S3 as average**. (Grade was S1 in the first year.) (** At least three wholesalers grade the apples and calculate the average. *Targeted figure "30%" is to be reconsidered as of the mid-term review.</p>	<p>Commodity chain survey</p>	<ul style="list-style-type: none"> • Priority of fruit production for the farmers in the project area remains high. • Trained extension officers in the project area transfer their skills and knowledge to the farmers. • Market conditions for value-added fruit products will not drastically worsen. • Natural disaster affecting fruit production will not occur.
<p>Output 1. Production and marketing of apricot products are improved.</p>	<p>1-1. Manuals for cultivation, processing and marketing. 1-2. The percentages of farmers in the pilot LSOs who apply the following technique in cultivation and processing as per guidance by the Project reach to the indicated numbers (percentages of farmers who apply these techniques before the project start are 0%).</p> <ul style="list-style-type: none"> • Root stock management (40%) • Grafting (40%) • Pruning (40%) • Pesticide application (40%) • Fertilization (40%) • Processing (30%) 	<p>1. Manuals for cultivation, processing and marketing are made 2. Project documents 3. Commodity chain survey</p>	<ul style="list-style-type: none"> • Priority of fruit production for the farmers in the project area remains high. • Market conditions for value-added fruit products will not drastically worsen. • Natural disaster affecting fruit production will not occur. • Stakeholders of the Project (dried fruits processors and fruits traders) will provide necessary cooperation.

<p>2. Production and marketing of apples are improved.</p>	<p>1-3. Marketing plan (including regional branding plan, etc.) for apricot products is developed focusing on sustainable farmers' income generation.</p> <p>2-1. Making manuals for cultivation, processing and marketing.</p> <p>2-2. The percentages of farmers in the pilot LSOs who apply the following technique in cultivation as per guidance by the Project reach to the indicated numbers (Percentages of farmers who apply these technique before the project start are 0%).</p> <ul style="list-style-type: none">• Disbudding and thinning fruits :50%• Grafting :50% (Recognition on the proper timings of cleft grafting, side grafting, and bud grafting are the main training targets.)• Seeding production :50%• Pruning :50%• Pesticide application :50% (Introduction of organic pesticide)• Application of newly introduced organic fertilizer :50% <p>2-3. 100% of core farmers in the pilot areas record the amount of apple produced and sold.</p> <p>2-4. The number of farmers who harvest, grade and pack for themselves is increased by 10%. (19 % (49HHs) of farmers harvested for themselves and 9% (21HHs) of them graded for themselves in the first year.) (Ratio of farmers packed their apples in the first year will be collected at the mid-term survey.)</p> <p>2-5. Marketing plan (including regional branding plan, etc.)for apple is developed focusing on sustainable farmers' income generation.</p>		
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Activity	Inputs		
	Japanese Side	Pakistani Side	
<p>1-1. Select the pilot areas and the core farmers.</p> <p>1-2. Introduce and disseminate the market research methods through the extension officers and the core farmers.</p> <p>1-3. Identify the varieties suitable for high quality dried apricot.</p> <p>1-4. Disseminate the appropriate cultivation techniques (combination of early and late varieties, grafting, shoot training, pruning, thinning, harvesting, fertilization, etc.) through the extension officers and the core farmers.</p> <p>1-5. Introduce and disseminate the standards of specifications and quality control methods for dried apricots and other products through the extension officers and the core farmers.</p> <p>1-6. Develop and disseminate the appropriate processing facilities, equipment and methods for dried apricots and other products through the extension officers and the core farmers.</p> <p>1-7. Promote the dried apricots and other products in international and domestic markets in cooperation with the private organizations (e.g., branding, exhibition, certification, etc.).</p> <p>1-8. Develop the manuals of cultivation, processing and marketing for the extension officers and the farmers.</p>	<p>1. Experts (1) Team Leader / Training 1 (2) Marketing (3) Fruit cultivation (Apple) (4) Fruit cultivation (Apricot) (5) Fruit processing (6) Project coordinator / Training 2</p> <p>Local consultants, if necessary</p> <p>2. Equipment / Machinery • Office equipment and others, if necessary</p> <p>3. Training in Japan • Training on cultivation, processing and marketing</p>	<p>1. Project Staff • counterpart personnel</p> <p>2. Facilities / Buildings • Office space and necessary facilities for the Japanese experts</p> <p>3. Expenses • Necessary recurrent costs such as staff salaries and allowances, fuels, transportation, and utility charges</p>	<ul style="list-style-type: none"> • Farmers in pilot areas are willing to participate in the Project. • Trained DoA staff stay at their positions.
<p>2-1. Select the pilot areas and the core farmers.</p> <p>2-2. Introduce and disseminate the market research methods through the extension officers and the core farmers.</p> <p>2-3. Identify the varieties suitable for high quality apple.</p> <p>2-4. Disseminate the appropriate cultivation techniques (combination of early and late varieties, grafting, shoot training, pruning, thinning, harvesting, fertilization, etc.) through the extension officers and the core farmers.</p> <p>2-5. Introduce and disseminate the standards of specifications and quality control methods for apples through the extension officers and the core farmers.</p> <p>2-6. Develop and disseminate the appropriate grading and packaging methods for apples through the extension officers and the core farmers.</p> <p>2-7. Promote the apples in international and domestic markets in cooperation with the private organizations (e.g., branding, exhibition, certification, etc.).</p> <p>2-8. Develop the manuals of cultivation, processing and marketing for the extension officers and the farmers.</p>			<p>Pre-conditions</p> <ul style="list-style-type: none"> • Necessary budget for the activities of DoA is secured. • Security situation in the project area remains stable.

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Annex 12 Revision of Project Design Matrix (PDM)

	Ver. PDM-2 (Current)	Ver. PDM-3 (Proposed)	Reasons/Justifications
Project Purpose			
Indicators for Project Purpose	1. Total quantity of A-graded dried apricots which are produced by the farmers in the project sites (the sub-villages where the core farmer reside) is increased by 30%.	1. Total quantity of A-graded dried apricots which are produced by the farmers in the project sites (the sub-villages where the core farmer reside) is increased by 15% .	➤ The Project will experience two (2) processing seasons instead of four (4) processing seasons that are originally assumed in starting the Project. Increase rate of total quantity in percentage will be determined as 15% instead of 30% since the Project will experience a half as many harvesting seasons as originally assumed.
	2. Total sales volume of apricot kernels, kernel products, apricot oil and oil products which are produced by the farmers in the pilot LSOs is increased by 30%.	2. <u>Apricot kernels and kernel products which are produced by the farmers in the pilot LSOs is exported.</u>	➤ As with the quantity of apricot products other than apricot oil products will be deleted as non-target of the indicator. A new indicator intending to produce and export quality apricot kernel products will be defined so as to exemplify the marketability of the products for the international market and DCM.
Output			
Indicator for Output 1	1-2. The percentages of farmers in the pilot LSOs who apply the following technique in apricot cultivation and processing as per guidance by the Project reach to the indicated numbers. <ul style="list-style-type: none"> • Root stock management (50%) • Grafting (50%) • Pruning (50%) • Pesticide application (50%) • Fertilization (50%) • Processing (50%) 	1-2. The percentages of farmers in the pilot LSOs who apply the following technique in apricot cultivation and processing as per guidance by the Project reach to the indicated numbers. <ul style="list-style-type: none"> • Root stock management (40%) • Grafting (40%) • Pruning (40%) • Pesticide application (40%) • Fertilization (40%) • Processing (30%) 	<ul style="list-style-type: none"> ➤ It is not necessary to specify apricot cultivation for application of cultivation and processing techniques. ➤ During the period while Japanese experts were prohibited to visit the GB area, less opportunities of technology transfer on apricot cultivation and fruit processing were given to the Pakistani side comparing to apple cultivation. Therefore, percentages of farmers practicing transferred technologies of apricot are expected to be lower levels than those of apple farmers. ➤ For reflection of actual situation on application of techniques, it is necessary to make modifications on questions of end line survey regarding processing and fertilization in the questionnaire.
Indicator for	2-2. The percentages of farmers	2-2. The percentages of farmers	➤ It is not necessary to specify apricot cultivation for

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Output 2	in the pilot LSOs who apply the following technique in cultivation as per guidance by the Project reach to the indicated numbers	in the pilot LSOs who apply the following technique in apple cultivation as per guidance by the Project reach to the indicated numbers	application of cultivation and processing techniques.
	2-3. The number of farmers in the project site who record the amount of apple produced and sold is increased by 20%.	2-3. <u>100% of core farmers in the pilot areas record the amount of apple produced and sold.</u>	<ul style="list-style-type: none"> ➤ It was found out that farmers in the pilot area do not have a balance; therefore, they cannot measure the weight of their products correctly. ➤ So as to demonstrate the possible advantage and its necessity of recording their transactions of apples, a new indicator showing all the core farmers are required to record the amount of apple produced and sold will be defined.
Project Activities			
Activities	1-5 Introduce and disseminate the standards of specifications and quality control methods for dried apricots, apricot oil and kernel nuts through the extension officers and the core farmers.	1-5. Introduce and disseminate the standards of specifications and quality control methods for dried apricots <u>and other apricot products</u> through the extension officers and the core farmers.	<ul style="list-style-type: none"> ➤ It is necessary to include jam, juice, sweets as well as apricot oil and kernel nuts in potential apricot products for the remaining period of implementation.
	1-6 Develop and disseminate the appropriate processing facilities, equipment and methods for dried apricots, apricot oil and kernel nuts through the extension officers and the core farmers	1-6 Develop and disseminate the appropriate processing facilities, equipment and methods for dried apricots <u>and other apricot products</u> through the extension officers and the core farmers.	<ul style="list-style-type: none"> ➤ It is necessary to include jam, juice, sweets as well as apricot oil and kernel nuts in potential apricot products for the remaining period of implementation.
	1-7. Promote the dried apricots and apricot oil in international and domestic markets in cooperation with the private	1-7. Promote the dried apricots <u>and other apricot products</u> in international and domestic markets in cooperation with the	<ul style="list-style-type: none"> ➤ It is necessary to include jam, juice, sweets, as well as apricot oil and kernel nuts in potential apricot products for the remaining period of implementation.

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	organizations (e.g., branding, exhibition, certification, etc.).	private organizations (e.g., branding, exhibition, certification, etc.).	
Others			
Name of Pilot LSOs	Pilot LSOs: BRSO, HRSO, LSO GOLD, RDO, and RLSO	Pilot LSOs: BRSO, HRSO, LSO GOLD, RDO, RLSO, <u>MASO</u> , <u>ARSO</u> and <u>GRSO</u>	➤ The description will be modified in response to the addition of three (3) new pilot LSOs in April 2015.

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添付資料 2: プロジェクトの PDM (Ver.2)

Title of the Project: Promotion of Value Added Fruit Products in Gilgit-Baltistan, Pakistan Term of Cooperation: 4 years from the arrival of the Japanese expert(s) Project Area: Gilgit-Baltistan Target Group: The farmers in the Project Area (* Pilot LSOs: BRSO, HRSO, LSO GOLD, RDO and RLSD) Implementing Organization: Department of Agriculture (DoA)	PDM-1 (Ver: 1) was prepared on 2011/07/19 PDM-1 (Ver: 2) was prepared on 2014/10/30
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Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumption
Overall Goal Production and marketing of apricot products and apples are improved in the project area	Sale amount of dried apricots and apples in Hunza-Nagar district in 2016 is increased more than 15% in 2018.	Gilgit-Baltistan Agriculture Statistics Survey Report	
Project Purpose Production and sales of high quality apricot products and apples are increased in the pilot areas.	1. Total quantity of A-graded dried apricots which are produced by the farmers in the project sites (the sub-villages where the core farmer reside) is increased by 30%. (A-graded dried apricots will be determined every year based on the result of interviews with farmers and traders. Unit prices of A-graded dried apricot are 120 PKR/Kg for opened style and PKR180/Kg for Turkish Style and Guli in the first year.) (Total sales volume was 1,350Kg (221 sample households) in the first year) 2. Total sales volume of apricot kernels, kernel products, apricot oil and oil products which are produced by the farmers in the pilot LSOs is increased by 30%. (Total sales volume in PKR in the first year will be collected at the mid-term survey.) 3. 80% of apples sold at Rawalpindi wholesale market through marketing research are graded S3 as average**. (Grade was S1 in the first year.) (** At least three wholesalers grade the apples and calculate the average. *Targeted figure "30%" is to be reconsidered as of the mid-term review.	Commodity chain survey	<ul style="list-style-type: none"> • Priority of fruit production for the farmers in the project area remains high. • Trained extension officers in the project area transfer their skills and knowledge to the farmers. • Market conditions for value-added fruit products will not drastically worsen. • Natural disaster affecting fruit production will not occur.
Output 1. Production and marketing of apricot products are improved.	1-1. Manuals for cultivation, processing and marketing 1-2. The percentages of farmers in the pilot LSOs who apply the following technique in apricot cultivation and processing as per guidance by the Project reach to the indicated numbers (percentages of farmers who apply these techniques before the project start are 0%). <ul style="list-style-type: none"> • Root stock management (50%) • Grafting (50%) • Pruning (50%) • Pesticide application (50%) • Fertilization (50%) • Processing (50%) 	1. Manuals for cultivation, processing and marketing are made 2. Project documents 3. Commodity chain survey	<ul style="list-style-type: none"> • Priority of fruit production for the farmers in the project area remains high. • Market conditions for value-added fruit products will not drastically worsen. • Natural disaster affecting fruit production will not occur. • Stakeholders of the Project (dried fruits processors and fruits traders) will provide necessary cooperation.

<p>2. Production and marketing of apples are improved.</p>	<p>1-3. Marketing plan (including regional branding plan, etc.) for apricot products is developed focusing on sustainable farmers' income generation.</p> <p>2-1. Making manuals for cultivation, processing and marketing.</p> <p>2-2. The percentages of farmers in the pilot LSOs who apply the following technique in apple cultivation as per guidance by the Project reach to the indicated numbers (Percentages of farmers who apply these technique before the project start are 0%).</p> <ul style="list-style-type: none">• Disbudding and thinning fruits :50%• Grafting :50% (Recognition on the proper timings of cleft grafting, side grafting, and bud grafting are the main training targets.)• Seeding production :50%• Pruning :50%• Pesticide application :50% (Introduction of organic pesticide)• Application of newly introduced organic fertilizer :50% <p>2-3. The number of farmers in the project site who record the amount of apple produced and sold is increased by 20%. (Ratio of farmers recorded the amount of apple production in the first year will be collected at the mid-term survey.)</p> <p>2-4. The number of farmers who harvest, grade and pack for themselves is increased by 10%. (19 % (49HHs) of farmers harvested for themselves and 9% (21HHs) of them graded for themselves in the first year.) (Ratio of farmers packed their apples in the first year will be collected at the mid-term survey.)</p> <p>2-5. Marketing plan (including regional branding plan, etc.)for apple is developed focusing on sustainable farmers' income generation</p> <p>*All numerical targeted figures are to be reconsidered as of the mid-term review.</p>		
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Activity	Inputs		
	Japanese Side	Pakistani Side	
<p>1-1. Select the pilot areas and the core farmers.</p> <p>1-2. Introduce and disseminate the market research methods through the extension officers and the core farmers.</p> <p>1-3. Identify the varieties suitable for high quality dried apricot.</p> <p>1-4. Disseminate the appropriate cultivation techniques (combination of early and late varieties, grafting, shoot training, pruning, thinning, harvesting, fertilization, etc.) through the extension officers and the core farmers.</p> <p>1-5. Introduce and disseminate the standards of specifications and quality control methods for dried apricots, apricot oil and kernel nuts through the extension officers and the core farmers.</p> <p>1-6. Develop and disseminate the appropriate processing facilities, equipment and methods for dried apricots, apricot oil and kernel nuts through the extension officers and the core farmers.</p> <p>1-7. Promote the dried apricots and apricot oil in international and domestic markets in cooperation with the private organizations (e.g., branding, exhibition, certification, etc.).</p> <p>1-8. Develop the manuals of cultivation, processing and marketing for the extension officers and the farmers.</p> <p>2-1. Select the pilot areas and the core farmers.</p> <p>2-2. Introduce and disseminate the market research methods through the extension officers and the core farmers.</p> <p>2-3. Identify the varieties suitable for high quality apple.</p> <p>2-4. Disseminate the appropriate cultivation techniques (combination of early and late varieties, grafting, shoot training, pruning, thinning, harvesting, fertilization, etc.) through the extension officers and the core farmers.</p> <p>2-5. Introduce and disseminate the standards of specifications and quality control methods for apples through the extension officers and the core farmers.</p> <p>2-6. Develop and disseminate the appropriate grading and packaging methods for apples through the extension officers and the core farmers.</p> <p>2-7. Promote the apples in international and domestic markets in cooperation with the private organizations (e.g., branding, exhibition, certification, etc.).</p> <p>2-8. Develop the manuals of cultivation, processing and marketing for the extension officers and the farmers.</p>	<p>1. Experts</p> <p>(1) Team Leader / Training 1</p> <p>(2) Marketing</p> <p>(3) Fruit cultivation (Apple)</p> <p>(4) Fruit cultivation (Apricot)</p> <p>(5) Fruit processing</p> <p>(6) Project coordinator / Training 2</p> <p>Local consultants, if necessary</p> <p>2. Equipment / Machinery</p> <p>• Office equipment and others, if necessary</p> <p>3. Training in Japan</p> <p>• Training on cultivation, processing and marketing</p>	<p>1. Project Staff</p> <p>• counterpart personnel</p> <p>2. Facilities / Buildings</p> <p>• Office space and necessary facilities for the Japanese experts</p> <p>3. Expenses</p> <p>• Necessary recurrent costs such as staff salaries and allowances, fuels, transportation, and utility charges</p>	<p>• Farmers in pilot areas are willing to participate in the Project.</p> <p>• Trained DoA staff stay at their positions.</p>
			<p>Pre-conditions</p> <p>• Necessary budget for the activities of DoA is secured.</p> <p>• Security situation in the project area remains stable.</p>

3. 日本側の投入

添付資料 3: 日本側の投入

1. 専門家の派遣

1) EXPERTS (Fieldwork)									
No.	Name	Year	Field	Period		M/M (Plan)		M/M (Result)	
				From	To	Days	M/M	Days	M/M
1	Mr. Kenichi Machida	2012	Team Leader/Training Planning 1	2012/7/24	2012/12/31	53	1.77	53	1.77
		2013	Team Leader/Training Planning 1	2013/1/1	2014/3/31	67	2.23	67	2.23
		2014	Team Leader/Training Planning 1	2014/5/15	2015/2/28	28	0.93	28	0.93
		2015	Team Leader/ Extension System	2015/4/3	2015/5/31	33	1.10	33	1.10
		Sub TOTAL					181	6.03	181
2	Mr. Yukio Ikeda	2012	Sub Leader/Marketing	2012/7/24	2012/12/31	69	2.30	69	2.30
		2013	Sub Leader/Marketing	2013/1/1	2014/3/31	145	4.83	145	4.83
		2014	Sub Leader/Marketing	2014/5/15	2015/2/28	88	2.93	60	2.00
		2015	Sub Leader/Marketing	2015/4/3	2015/5/31	38	1.27	38	1.27
		Sub TOTAL					340	11.33	312
3	Mr. Kunihiko Suzuki	2012	Fruit Cultivation (Apricot)	2012/7/24	2012/12/31	49	1.63	49	1.63
		2013	Fruit Cultivation (Apricot)	2013/1/1	2014/3/31	82	2.73	82	2.73
		2014	Fruit Cultivation (Apricot)	2014/5/15	2015/5/31	14	0.47	14	0.47
		Sub TOTAL					145	4.83	145
4	Mr. Tomoyuki Kon	2015	Fruit Cultivation (Apricot)	2015/4/3	2015/5/31	32	1.07	32	1.07
		Sub TOTAL					32	1.07	32
5	Mr. Yoshiro Kodera	2012	Fruit Cultivation (Apple)	2012/7/24	2012/12/31	77	2.57	77	2.57
		2013	Fruit Cultivation (Apple)	2013/1/1	2014/3/31	94	3.13	94	3.13
		2014	Fruit Cultivation (Apple)	2014/5/15	2015/2/28	14	0.47	14	0.47
		2015	Fruit Cultivation (Apple)	2015/4/3	2015/5/31	56	1.87	56	1.87
		Sub TOTAL					241	8.04	241
6	Mr. Tamotsu Murai	2015	Pest and Disease Control	2015/4/3	2015/5/31	23	0.77	23	0.77
		Sub TOTAL					23	0.77	23
7	Mr. Toshiharu Sato	2012	Fruit Processing	2012/7/24	2012/12/31	51	1.70	51	1.70
		2013	Fruit Processing	2013/1/1	2014/3/31	59	1.97	59	1.97
		2014	Fruit Processing	2014/5/15	2014/7/31	40	1.33	11	0.37
		Sub TOTAL					150	5.00	121
8	Mr. Hiroto Aihara	2014	Fruit Processing	2014/7/14	2015/2/28	0	0.00	27	0.90
		2015	Fruit Processing	2015/4/3	2015/5/31	28	0.93	28	0.93
		Sub TOTAL					28	0.93	55
9	Mr. Ryoto Uchida	2012	Coordinator/ Training Program 2	2012/7/24	2012/12/31	60	2.00	60	2.00
		2013	Coordinator/ Training Program 2	2013/1/1	2014/3/31	97	3.23	97	3.23
		2014	Supply Chain Management/ Coordinator/ Training Program	2014/5/15	2015/2/28	97	3.23	79	2.63
		2015	Supply Chain Management	2015/4/3	2015/5/31	28	0.93	28	0.93
		Sub TOTAL					282	9.39	264
10	Mr. Shinta Nishino	2015	Coordinator/ Training Program	2015/4/3	2015/5/31	48	1.60	48	1.60
		Sub TOTAL					48	1.60	48
TOTAL						1470	48.99	1422	47.40

2) EXPERTS (Work in Japan)

No.	Name	Year	Field	Period		M/M (Plan)		M/M (Result)	
				From	To	Days	M/M	Days	M/M
1	Mr. Kenichi Machida	2012	Team Leader/Training Planning 1	2012/7/24	2012/12/31	21	0.70	21	0.70
		2013	Team Leader/Training Planning 1	2013/1/1	2014/3/31	7	0.23	7	0.23
		2014	Team Leader/Training Planning 1	2014/5/15	2015/2/28	26	1.30	26	1.30

		2015	Team Leader/ Extension System	2015/4/3	2015/5/31	5	0.25	5	0.25
					Sub TOTAL	59	2.48	59	2.48
2	Mr. Yukio Ikeda	2012	Sub Leader/Marketing	2012/7/24	2012/12/31	13	0.43	13	0.43
		2013	Sub Leader/Marketing	2013/1/1	2014/3/31	40	1.33	40	1.33
		2014	Sub Leader/Marketing	2014/5/15	2015/2/28	34	1.70	38	1.90
		2015	Sub Leader/Marketing	2015/4/3	2015/5/31	5	0.25	5	0.25
					Sub TOTAL	92	3.71	96	3.91
3	Mr. Kunihiko Suzuki	2012	Fruit Cultivation (Apricot)	2012/7/24	2012/12/31	9	0.30	9	0.30
		2013	Fruit Cultivation (Apricot)	2013/1/1	2014/3/31	13	0.43	13	0.43
		2014	Fruit Cultivation (Apricot)	2014/5/15	2015/5/31	25	1.25	25	1.25
						Sub TOTAL	47	1.98	47
4	Mr. Tomoyuki Kon	2015	Fruit Cultivation (Apricot)	2015/4/3	2015/5/31	3	0.15	3	0.15
					Sub TOTAL	3	0.15	3	0.15
5	Mr. Yoshiro Kodera	2012	Fruit Cultivation (Apple)	2012/7/24	2012/12/31	9	0.30	9	0.30
		2013	Fruit Cultivation (Apple)	2013/1/1	2014/3/31	30	1.00	30	1.00
		2014	Fruit Cultivation (Apple)	2014/5/15	2015/2/28	75	3.75	71	3.55
		2015	Fruit Cultivation (Apple)	2015/4/3	2015/5/31	0	0.00	0	0.00
					Sub TOTAL	114	5.05	110	4.85
6	Mr. Tamotsu Murai	2015	Pest and Disease Control	2015/4/3	2015/5/31	3	0.15	3	0.15
					Sub TOTAL	3	0.15	3	0.15
7	Mr. Toshiharu Sato	2012	Fruit Processing	2012/7/24	2012/12/31	10	0.33	10	0.33
		2013	Fruit Processing	2013/1/1	2014/3/31	10	0.33	10	0.33
		2014	Fruit Processing	2014/5/15	2014/7/31	5	0.25	12	0.60
					Sub TOTAL	25	0.91	32	1.26
8	Mr. Hiroto Aihara	2014	Fruit Processing	2014/7/14	2015/2/28	12	0.60	12	0.60
		2015	Fruit Processing	2015/4/3	2015/5/31	3	0.15	3	0.15
					Sub TOTAL	15	0.75	15	0.75
9	Mr. Ryoto Uchida	2012	Coordinator/ Training Program 2	2012/7/24	2012/12/31	16	0.53	16	0.53
		2013	Coordinator/ Training Program 2	2013/1/1	2014/3/31	16	0.53	16	0.53
		2014	Supply Chain Management/ Coordinator/ Training Program	2014/5/15	2015/2/28	26	1.30	38	1.90
		2015	Supply Chain Management	2015/4/3	2015/5/31	3	0.15	3	0.15
					Sub TOTAL	61	2.51	73	3.11
10	Miss. Mika Kawamoto	2013	Third Country Training	2013/1/1	2014/3/31	120	4.00	120	4.00
					Sub TOTAL	120	4.00	120	4.00
11	Miss. Yoshiko Honda	2014	Third Country Training	2014/5/15	2015/2/28	120	6.00	120	6.00
					Sub TOTAL	120	6.00	120	6.00
12	Mr. Shinta Nishino	2015	Coordinator	2015/4/3	2015/5/31	3	0.15	3	0.15
					Sub TOTAL	3	0.15	3	0.15
TOTAL						662	27.84	681	28.79

Days	M/M	Days	M/M
1470	48.99	1422	47.4
662	27.84	681	28.79
2132	76.83	2103	76.19

2. 供与機材リスト

JFY	Item Name	Model	Qty	Cost (JPY)	Location	Status		Remarks
						Condition of Equipment	Frequency of Use	
2012	Integrated printer (Copier)	Xerox Work Centre 7125	1	891,408	Office of the Deputy Director Agriculture Hunza Nagar	A	A	
	Refrigerator/freezer	National 805T	1	50,451	Office of the Deputy Director Agriculture Hunza Nagar	B	D	
	Projector	Acer X110P	1	55,637	Office of the Deputy Director Agriculture Hunza Nagar	B	C	
	Video camera	Sony HDE-CX210E	1	54,694	Office of the Deputy Director Agriculture Hunza Nagar	A	D	
	Laptop PC	HP ProBook 4530s	1	54,694	Office of the Deputy Director Agriculture Hunza Nagar	B	A	
	Laptop PC	HP ProBook 4540s	1	54,694	Office of the Deputy Director Agriculture Hunza Nagar	B	A	
	Color Laserjet Printer	HP CP1020	1	40,549	Office of the Deputy Director Agriculture Hunza Nagar	B	A	
	4 in 1 B/W Printer	Panasonic KXMB2025	1	37,720	Office of the Deputy Director Agriculture Hunza Nagar	B	A	
	Generator	KIPOR KGE2500E	1	61,295	Office of the Deputy Director Agriculture Hunza Nagar	B	A	
	Brixmeter (2 sets)	Atago PAL-J	1	62,889	Office of the Deputy Director Agriculture Hunza Nagar	A	C	
	Acidmeter (2 sets)	Atago PAL-AC1	1	117,000	Office of the Deputy Director Agriculture Hunza Nagar	A	C	
2013	Apricot Oil Extractor	Tuchmir Engineering	1	240,786	Golden Jubilee Organization for Local Development, Aliabad	B	A	
2014	Laptop PC	Gigabite	1	57,942	Office of the Deputy Director Agriculture Hunza Nagar	A	C	
	Sprayer	Turbo-100E	1	111,435	Office of the Deputy Director Agriculture Hunza Nagar	A	C	
2015	Motorcycle	Honda euro 2 CG125	2	243,950	Office of the Deputy Director Agriculture Hunza Nagar	A	B	
	Sprayer	Turbo-100E	2	226,100	Office of the Deputy Director Agriculture Hunza Nagar	A	D	
	Laptop PC	Inspiron 15 3000 series	1	57,894	Office of the Deputy Director Agriculture Hunza Nagar	A	E (Procured in April 2015)	
TOTAL				2,422,939				

	Condition of equipment	Classification of the frequency of use of the equipment
Rank	Statement	Statement
A	good condition	Used frequently: Almost everyday
B	in moderate condition	Used well : 1-3 times per week
C	for repair	Used: 1-3 times per month
D	unable to use	Not so much used: 1-3 times per year
E	lost	Never used: Not used

3. 運営費の負担

Local cost borne by the Japanese side

	Year 1	Year 2	Year 3	Year 4 *	Total
• Training /seminar in Pakistan (per-diem, logging allowance, rental car, seminar room, fee for lecturers)	110,000	1,060,000	990,000	330,000	2,490,000
• Market survey and study tour (per-diem, logging allowance, rental car)	640,000	1,380,000	420,000	0	2,440,000
• Household survey and market survey (Year 1)	2,390,000	0	850,000	4,490,000	7,730,000
• Office expenses (Stationery, communication cost)	250,000	220,000	130,000	10,000	610,000
• Technical activities on the field (Consumable goods)	300,000	1,570,000	1,340,000	220,000	3,430,000
Total	3,690,000	4,230,000	3,730,000	5,050,000	16,700,000

[JPY]

(Note)

- Training /seminar in Pakistan (per-diem, logging allowance, rental car, seminar room, fee for lecturers) for Year 4 includes expenditure until the end of April 2015.
- Household survey and market survey (Year 1) for Year 4 includes expenditure until the end of May 2015.
- Office expenses (Stationery, communication cost) and Technical activities on the field (Consumable goods) for Year 4i includes expenditure until May 11, 2015.

4.日本と他国における研修

No.	Year	Training Course Title	Country	Period		Number of Trainee								
				From	To	DoA		Farmer/LSO		Private firm		Male	Female	Total
						Male	Female	Male	Female	Male	Female			
1	2013	Training, Pruning, Grafting and Marketing	Japan	2013/2/17	2013/3/16	2	0	5	0	0	0	7	0	7
2	2013	Disease and pest control, fertilization, disbudding, fruit thinning and marketing	Japan	2013/5/12	2013/6/8	1	0	6	0	0	0	7	0	7
3	2013	Apricot processing and marketing	Japan	2013/7/7	2013/7/20	2	1	0	3	2	0	4	4	8
4	2013	Exposure tour to learn the advanced cultivation and processing techniques of apricots and other fruits in Turkey	Turkey	2013/9/29	2013/10/7	1	0	3	0	1	0	5	0	5
5	2013	Selection of superior varieties, post-harvest activities, and marketing of apples	Japan	2013/11/2	2013/11/4	3	0	3	1	0	0	6	1	7
6	2013	Training on marketing and promotion of apricot products at an exhibition in Japan	Japan	2014/3/2	2014/3/12	1	0	2	0	2	0	5	0	5
7	2014	Apple cultivation-1	Japan	2014/6/29	2014/8/14	1	0	3	2	0		4	2	6
8	2014	Apricot Cultivation	Japan	2014/7/21	2014/8/14	2	0	4	0	0	0	6	0	6
9	2014	Food Processing	Thailand	2014/9/22	2014/9/29	2	0	0	0	3	0	5	0	5
10	2014	SIAL Food Expo, 2014	France	2014/10/16	2014/10/27	1	0	0		2	0	3	0	3
11	2014	Apple Cultivation-2	Japan	2014/10/26	2014/12/6	2	0	4	0	0	0	6	0	6
12	2014	Agriculture Extension System	Japan	2014/11/3	2014/11/15	3	0	9	1	0	0	12	1	13
13	2014	Advanced Marketing	Japan	2014/11/9	2014/11/22	1	0	4	1	1	0	6	1	7
Total						22	1	43	8	11	0	76	9	85
Grand Total						23		51		11		85		

4. パキスタン側の投入

添付資料 4: パキスタン側の投入

1. カウンターパートの配置

Role in the Project	Name	Organization	Job Title	Period					
				From	To	2012	2013	2014	2015
Project Director	Mr. Naib Khan	Department of Agriculture	The Secretary, Agriculture, Livestock and Fisheries Department, Gilgit-Baltistan	2012/1/3	2013/4/8	■			
	Mr. Syed Hadi		-do-	2013/4/9	2014/2/26		■		
	Mr. Muhammad Kamal		-do-	2014/4/1	2014/11/7			■	
	Mr. Khalid Mehmood		-do-	2014/11/11	at present				■
Project Manager	Mr. Mahmood Asghar	Department of Agriculture	Director Agriculture	2012/9/10	2015/4/20	■	■		
	Dr. Fazal Rehman	-do-	-do-	2015/4/20	at present				■
Project Coordinator	Mr. Javed Akhtar	Department of Agriculture	Deputy Director Agriculture	2012/9/10	at present	■	■		
Extension	Mr. Ghulam Mustafa	Department of Agriculture Hunza-Nagar	Deputy Director Agriculture Hunza-Nagar	2014/5/28	2015/4/12			■	
	Mr. Muzaffar Wali	Department of Agriculture Hunza-Nagar	-do-	2015/4/13	at present				■
Marketing	Mr. Javed Akhtar	Department of Agriculture	Deputy Director Agriculture	2012/9/10	2013/10/1	■			
	Mr. Abdullah Khan		-do-	2013/10/1	at present		■		
Fruit cultivation (Apricot)	Mr. Ramazan Ali	Department of Agriculture Hunza-Nagar	Agricultural Assistant Hunza-Nagar	2012/9/10	at present	■	■		
Fruit cultivation (Apple)	Mr. Farman Karim	Department of Agriculture Hunza-Nagar	Agricultural Officer Hunza-Nagar	2012/9/10	2015/4/12	■	■		
	Mr. Hamid Hussain	Department of Agriculture Hunza-Nagar	-do-	2015/4/13	at present				■
Fruit cultivation (Unspecified field)	Mr. Javeed Karim	Department of Agriculture Hunza-Nagar	-do-	2013/3/25	at present		■		
Fruit cultivation (Pest & Disease Control)	Mr. Javeed Karim	Department of Agriculture Hunza-Nagar	-do-	2015/4/13	at present				■
Fruit processing	Mr. Ijlal Hussain	Department of Agriculture Hunza-Nagar	Agricultural Officer	2012/9/10	2015/4/12	■	■		
	Ms. Samina Shaheen	Department of Agriculture Hunza-Nagar	Agricultural Officer Hunza-Nagar	2013/3/25	at present		■		
	Mr. Javeed Karim	Department of Agriculture Hunza-Nagar	-do-	2015/4/13	at present				■
Extension	Mr. Zahid Ali Khan	Department of Agriculture Skardu	Deputy Director Agriculture Skardu	2014/5/28	2014/10/29			■	
	-do-		Deputy Director Agriculture Ganche	2014/10/30	at present				■
Fruit cultivation (Apricot)	Mr. Shujat Hussain	Department of Agriculture Skardu	Agricultural Officer Skardu	2012/9/10	2014/10/29	■	■		
	-do-		Agricultural Officer Ganche	2014/10/30	at present				■
Fruit processing	Mr. Zahid Ali Khan	Department of Agriculture Skardu	Deputy Director Agriculture Skardu	2012/9/10	2015/4/12	■	■		
	Mr. Ijlal Hussain	Department of Agriculture Skardu	Agricultural Officer Skardu	2015/4/13	at present				■

2. 運営費の負担

No.	Category	Detail	2012-13*	2013-14*	2014-15*	Total
			PKR	PKR	PKR	PKR
1	Establishment Charges	Staff salary	1,721,409	1,234,321	1,124,000	4,079,730
2	Strengthening of food Processing Centre	Processing facility, Machinery, Equipment, Raw materials, Chemical	238,695	351,025	840,000	1,429,720
3	Cost of durable goods	Laptop, Computer, Printer	33,790	148,000	251,000	432,790
4	Operational Budget	Repair and maintenance of vehicles, Repair and maintenance of Office equipment Postage/Courier, Telephone/internet, Publicity charges, Startup workshop, meeting, seminars etc. Stationery, Rent of Building, Utility bills (Electricity, Gas etc.), Hot & Cold weather charges	2,606,106	3,466,654	3,471,000	9,543,760
Total			4,600,000	5,200,000	5,686,000	15,486,000

* financial year: July to June

5. プロジェクト活動

添付資料 5: プロジェクト活動

Output 0: Project plan is drawn up and the management system is established.	
Project Activities	Actual Progress
0-1 Revise the PDM	The PDM was revised once on October 30, 2014.
0-2 Draw up work plan (work in Japan).	The Project drew up and submitted work plan (English version) four times in August 2012, January 2013, June 2014 and April 2015. The Project also drew up and submitted work plan (Japanese version) three times in August 2012, May 2014 and April 2015.
0-3 Hold the Joint Coordinating Committee (JCC).	The Project held JCC three times in October 9, 2012; April 22, 2013; and October 30, 2014.
0-4 Establish the project implementation structure.	The Project Management Unit (PMU) that consists of DoA officers and JICA experts plays a leading role in managing and implementing project activities in collaboration with LSOs and farmers. The Project appoints two (2) core farmers and at least one (1) extension personnel for each target LSO. They are expected to play a leading role in disseminating technologies introduced by the Project to other farmers within target LSO as well as to other LSOs. Joint Coordinating Committee (JCC) are established to discuss, approve and decide the important issues of the Project such as progress report, annual work plan and PDM and to share the progress of the Project.
0-5 Establish the extension system	The Project has put stress on extension activities in the third implementation year, assigning an expert in extension. Chief advisor plays a role of extension as well.
0-6 Hold the final seminar	The Project will hold the final seminar so as to present and disseminate the results and achievement of the Project before the termination.

Output 1: Production and marketing of apricot products are improved.	
Project Activities	Actual Progress
1-1. Select the pilot areas and the core farmers.	Hunza-Nagar and Skardu are selected as a target and sub-target districts respectively. In 2012, six (6) pilot LSOs (RDO, GOLD, MLSO, RLSO, BRSO and HRSO) and two (2) core farmers for each pilot LSO were selected as the target LSOs. In April 2015, another three (3) pilot LSOs (MASO, GRSO and ARSO) were added as the additional target LSOs and two (2) core farmers for each pilot LSO were also selected so as to promote extension of skills and knowledge.
1-2. Introduce and disseminate the market research methods through the extension officers and the core farmers.	Through the market research, the prices of major types of dried apricots in DC become clear. Some of the potential buyers of high quality dried apricots have been identified. The Project conducted the baseline survey in September 2012 and the mid-term survey in April 2015 for the target area (Hunza-Nagar and Skardu) to grasp the current situation of fruit production and marketing in the target area. The results of the mid-term survey will be finalized in the end of May 2015.
1-3. Identify the varieties suitable for high quality dried apricot.	Top 10 high commercial value varieties (e.g. Habie, Alishakhakas, Shikanda, etc. from Hunza-Nagar, and Halman, Karfo Chuli and Sul Chaks from Skardu.) for dried apricots, kernel nuts and apricot oil were selected by C/P, core farmers and target LSOs. Preferred varieties in Japan and DC were identified.
1-4. Disseminate the appropriate cultivation techniques (combination of early and late varieties, grafting, shoot training, pruning, thinning, harvesting, fertilization, etc.) through the extension officers and the core farmers.	Apricot cultivation training was provided to DoA counterparts, LSO extension personnel, core-farmers, C/P training trainees and local seminar participants on grafting, young tree management, fruit thinning, pruning, training, and lowering trees and changing tree shape in Japan and project target area. Training on Bokashi, Mountain Micrograms Liquid (MML), BCL (insect repellent), organic fertilizer (Bordeaux mixture) was also provided. The Project developed several teaching materials for farmers so as to disseminate techniques and skills introduced by the Project. The current challenges to be mainly coped with are to select the mother trees of the superior varieties. The Project is scheduled to start the activity in 2015.
1-5. Introduce and disseminate the	The information on the quality standards were collected in the market survey in

<p>standards of specifications and quality control methods for dried apricots, apricot oil and kernel nuts through the extension officers and the core farmers.</p>	<p>Islamabad and Lahore where DoA C/Ps, core farmers, local consultant, as well as supply chain expert met with wholesalers and retailers. Also, the relevant information on European market are collected by the participants to the SIAL exhibition in Paris, which included marketing and supply chain expert.</p> <p>The JICA expert discussed with Nippon Kaji Kentei Kyokai (NKKK) and OMIC Co., Ltd. of Japan, a pesticide residuals analysis and food testing firm, and collected information of exporting process for dried apricot, apricot oil and kernel nut.</p> <p>During the processing workshop in October, the participants reviewed the grading and quality control methods. C/P took photos of sample dry apricots during the workshop and distributed the photos to the LSOs they worked with. C/P, core farmers and extension workers acquired basic quality standards and control methods.</p>
<p>1-6. Develop and disseminate the appropriate processing facilities, equipment and methods for dried apricots, apricot oil and kernel nuts through the extension officers and the core farmers.</p>	<p>The Project attempted to make several prototypes of sun dryers for apricot (house type, tunnel type, umbrella drier and improved triangular roof drier) in 2014. However, the Project has not finalized sun dryer yet since Japanese experts do not have a chance to stay in the GB Region in July and August, the harvesting season of apricot, and to conduct dry experiment in the target areas. The Project is scheduled to finalize drying equipment in 2015. As a result, core farmers improved the quality of their dried apricots.</p> <p>Also, the most of farmers acquired basic skills of grading dried apricots and kernel nuts</p> <p>The Project conducted several training sessions on general fruit processing in in-country and overseas survey trips. Training on apricot processing was done by contracted Pakistani local expert. Due to high potential demand for kernel nuts in overseas countries, the Project examined the amygdalin content of kernel nuts for export. There was a big difference in amygdalin content between examined in Pakistan (by Pakistan Council of Scientific & Industrial Research (PCSIR)) in 2014 and examined in Japan (by Nagano Prefecture General Industrial Technology Center) in 2013. It is necessary to reexamine the amygdalin content of kernel nuts.</p> <p>The Project introduced an oil extractor and provided guidance of oil extraction for the extracting machine to GOLD. The Project developed several training materials for oil extraction and promotes dissemination of oil extraction techniques with the training materials. The Project in collaboration with LSOs will start production of apricot jam for high value-added, utilizing unused apricot.</p>
<p>1-7. Promote the dried apricots and apricot oil in international and domestic markets in cooperation with the private organizations (e.g., branding, exhibition, certification, etc.).</p>	<p>The Project organizes and conducts market research survey in DCM (Islamabad and Lahore) every year since the commencement of the Project, where the Project and LSOs collect updated market information and negotiated business with sales agents. As a result, some supported farmers succeeded in exporting their dried apricots and walnuts through sales agent in Lahore. The Project organized exhibition opportunities for FOODX in Japan and SIAL Food Expo, 2014 in France, where the Project and private firms conducted marketing survey and business negotiation. As a result, some supported farmers and the local processor has succeeded in exporting dried apricot to Japan from 2013. In addition, the Project developed several training materials for apricot processing and promotes dissemination of apricot processing techniques with the training materials. Furthermore, the Project is making efforts in developing the regional brand for Hunza apricot products. The Project succeeded in designing the logo for the products. The Project developed the marketing strategy as well and the Project will develop marketing action plan in 2015 along with the strategy.</p>
<p>1-8. Develop the manuals of cultivation, processing and marketing for the extension officers and the farmers.</p>	<p>The Project is formulating manuals for cultivation, processing and marketing based on project activities. As of the mid-term review, the following topics and contents would be included:</p> <ul style="list-style-type: none"> - Fruit Thinning (Apricot) - Apple Cultivation Calendar - Organic Insect Repellent

	<ul style="list-style-type: none"> - (Bio-Insecticide)(Apple, Apricot) - Compost(Apple, Apricot) - Grafting and Budding(Apple, Apricot) - Mountain Micro-Organism Liquid (MML)(Apple, Apricot) - Lime sulfur mix and Bordeaux mix (Apple, Apricot) - Pruning(Apple, Apricot) - Dried Organic Apricot Method - Apricot Drying Brochure - Dry Apricot Processing - Kernel nuts Grading - Brochure of Apricot Oil Extraction - Overview of Market in DC - Overview of Markets for Apricot 2013 <p>Furthermore, the Project has a plan to formulate guidebook on apple and apricot cultivation and processing by the time of project termination. Currently, experts are conceptualizing its contents and editing strategy.</p>
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Output 2: Production and marketing of apples are improved.	
Project Activities	Actual Progress
2-1. Select the pilot areas and the core farmers.	Hunza-Nagar and Skardu are selected as a target and sub-target districts respectively. In 2012, six (6) pilot LSOs (RDO, GOLD, MLSO, RLSO, BRSO and HRSO) and two (2) core farmers for each pilot LSO were selected as the target LSOs. In April 2015, another three (3) pilot LSOs (MASO, GRSO and ARSO) were added as the additional target LSOs and two (2) core farmers for each pilot LSO were also selected so as to promote extension of skills and knowledge.
2-2. Introduce and disseminate the market research methods through the extension officers and the core farmers.	Through the market research, the prices of major types of apple in DC become clear. A couple of traders/buyers of fresh apple have been identified, the business relationship between these traders/buyers and farmers have been strengthened. The Project conducted the baseline survey in September 2012 and the mid-term survey in April 2015 for the target area (Hunza-Nagar and Skardu) to grasp the current situation of fruit production and marketing in the target area. The results of the mid-term survey will be finalized in the end of May 2015.
2-3. Identify the varieties suitable for high quality apple.	Red Delicious, Star King, and Golden Delicious were selected as superior varieties. In addition, Fuji, Tsugaru and Chiyuki, which are likely to be valued in the future, were officially introduced. The two DoA nurseries (Ghulmet and Murtazaabad), core-farmers, and participants in Training in Japan have multiplied and/or conduct graft propagation of the above varieties.
2-4. Disseminate the appropriate cultivation techniques (combination of early and late varieties, grafting, shoot training, pruning, thinning, harvesting, fertilization, etc.) through the extension officers and the core farmers.	Apple cultivation training was provided to DoA counterparts, LSO extension personnel, core-farmers, C/P training trainees and local seminar participants on grafting, fruit thinning, pruning, training, Bokashi, Mountain Micrograms Liquid (MML), BCL (insect repellent), organic fertilizer (Bordeaux mixture) in Japan and project target area. Many farmers of the target LSOs apply these techniques except for Pesticide application and Application of newly introduced organic fertilizer. . Many extension seminars were conducted by target LSOs.
2-5. Introduce and disseminate the standards of specifications and quality control methods for apples through the extension officers and the core farmers.	Training was conducted on quality standards and quality control methods. Farmers participated in training in Japan and/or market research in DC understood importance of quality standards. Apple grading chart is introduced for grading.
2-6. Develop and disseminate the appropriate grading and packaging methods for apples through the extension officers and the core farmers.	Post-harvest training was provided to DoA counterparts, core-farmers, C/P training trainees and local seminar participants on harvesting, sorting and packaging. In particular, the Project conducted training sessions on sorting and packaging in country specific training held in Japan and assigned the local expert in those areas. Skills and techniques of some famers in the target areas

	<p>including core farmers were improved and the quality of the apples in the apple market of Islamabad was evaluated as S3 grade from S1 grade. Some farmers started conducting these processes for themselves (see 2-8).Also, in 2014, some farmers succeeded in collectively harvesting, sorting, packaging and selling apples on their own.</p> <p>The Project has improved carton boxes for trial marketing year by year.</p>
<p>2-7. Promote the apples in international and domestic markets in cooperation with the private organizations (e.g., branding, exhibition, certification, etc.).</p>	<p>The Project organizes and conducts market research survey in DCM (Islamabad and Lahore) every year since the commencement of the Project, where the Project and LSOs collect updated market information and conducted trial sales in the local market. As a result, some supported farmers in the area where farmers had commonly sold their apples directly from their fruit fields succeeded in collectively harvesting, sorting, packaging apples and hiring a truck to deliver apples to Islamabad wholesale market. The Project succeeded in designing the logo for the products. The Project developed the marketing strategy as well and the Project will develop marketing action plan in 2015 along with the strategy.</p>
<p>2-8. Develop the manuals of cultivation, processing and marketing for the extension officers and the farmers.</p>	<p>The Project is formulating manuals for cultivation, processing and marketing based on the products for project activities. As of the mid-term review, the following topics and contents would be included:</p> <ul style="list-style-type: none"> - Fruit Thinning (Apple) - Apple Cultivation Calendar - Organic Insect Repellent - Bio-Insecticide (Apple and Apricot) - Compost (Apple and Apricot) - Grafting and Budding (Apple and Apricot) - Mountain Micro-Organism Liquid (MML)(Apple and Apricot) - Lime sulfur mix and Bordeaux mix (Apple and Apricot) - Pruning (Apple and Apricot) <p>Furthermore, the Project has a plan to formulate guidebook on apple and apricot cultivation and processing by the time of project termination. Currently, experts are conceptualizing its contents and editing strategy.</p>

添付資料 6: 研修教材リスト

Date	Material Title	Number of copies	LSOs to which the materials were distributed
May, Jun 2013	Fruit Thinning (Apple)	300	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO
Jan 2015	Apple Cultivation Calendar	1000	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO
May, Jun 2013	Fruit Thinning (Apricot)	300	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO, MLSO
May, Jun 2013	Organic Insect Repellent (Bio-Insecticide)	300	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO
May, Jun 2013	Compost	300	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO
May, Jun 2013	Grafting and Budding	300	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO, MLSO
May, Jun 2013	Mountain Micro-Organism Liquid (MML)	300	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO
Apr 2015	Pruning	100	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO
May, Jun 2013	Dried Organic Apricot Method	30	GOLD, RDO
Jul 2013	Apricot Drying Brochure	30	GOLD, RDO
Oct 2013	Dry Apricot Processing	30	GOLD, RDO
Oct 2013	Kernel nuts Grading	50	GOLD, RDO
Oct 2013	Brochure of Apricot Oil Extraction	50	GOLD
Oct 2012	Overview of Market in DC	50	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO
Dec 2013	Overview of Markets for Apricot 2013	20	GRSO, MASO, ARSO, BRSO, HRSO, GOLD, RDO, RLSO

7. 中間調査の質問票

添付資料 7 中間調査の質問票

(For apricot farmers)

Draft Questionnaire for Household Interview

(Baseline Survey for GB Fruits Project)

Date	<input type="text" value="2015/ /"/>
Village	<input type="text"/>
Mohara	<input type="text"/>
Household #	<input type="text"/>
Enumerator's Name	<input type="text"/>
	<input type="text"/>
Supervisor's Name	<input type="text"/>

Tick if you checked

I Household

Updated Apr 22nd, 2015

*Household is a group of people who stay together and share a common kitchen. Budget may consist of several sources of income.

A Name of the respondent

Male respondent	
Female respondent	

son of	
daughter of	

B Family name

C Telephone number of respondent

D Name of the family head

E What is the age and gender of the family head?

Age	
Male=1/Female=2	

F The number of other family members (who live in the house currently. Exclude members who live outside house)

Number of Family Member	Male	Female
Under 17 of age		
Ager of 18-59		
Over 60 of age		

II Education

A What is the educational background of the family head?

- No formal education =1
- Primary school =2
- Secondary school =3
- Higher secondary school =4
- Graduate =5
- Master's =6
- Ph.D =7
- Others (specify) =8

III Occupation and Major Source of Income

1st	2nd	3rd

A What is the major source of income of your household?

- Agriculture farming =1
- Livestock farming =2
- Agricultural labor =3
- Livestock labor =4
- Other labor (specify _____) =5
- Proving services (specify _____) =6

Shop/Business	=7
Salaries from office work	=8
Land rent	=9
Room/building rent	=10
Remittance from family member out side of village	=11
Remittance from family member in foreign country	=12
Pension	=13
Other source (specify)	=14

IV Asset holding

A What are the areas of agricultural land for each type?

	Cultivated land	Marginal land	Barren land
Owned and self cultivated (by family members)			kanal
Owned and rented out to tenants			kanal
Rented from landowner			kanal

B Number of fruits and nuts trees

	Apple	Apricot	Cherry	Peach	Parsi-mmon	Pear	Walnut	Almond	Other (specify)	Other (specify)	Other (specify)
# of trees											

C Livestock

(Adult if livestock is 2 years or older)

1: Cattle

	Female		Male	
	Adult	Baby	Adult	Baby
Number				

2: Yaku

	Female		Male	
	Adult	Baby	Adult	Baby
Number				

3: Goat

	Female		Male	
	Adult	Baby	Adult	Baby
Number				

4: Sheep

	Female		Male	
	Adult	Baby	Adult	Baby
Number				

5: Chicken

Number	
--------	--

6: Other (sprcify

Number	
--------	--

7: Other (sprcify

Number	
--------	--

) 8: Other (sprcify

Number	
--------	--

)

V Fresh Apricot production and marketing

1 Area harvested for apricot

Area owned and self-cultivated		kanal
Area rented in		kanal
Area rented out		kanal

2 Number of trees owned by variety

Name of variety	Total # of trees	Total # of trees bearing fruits every year	# of youg trees that do not bear fuits	# of trees bearing alternate fruits

Nasi sil					number of trees
Sardi					number of trees
Kushilian					number of trees
Hashi					number of trees
Ali shahkaber					number of trees
Habie					number of trees
Jangeer					number of trees
Brumju					number of trees
Shikanda					number of trees
Ali shahkhakas					number of trees
Alman					number of trees
Other (specify					number of trees
Other (specify					number of trees
Other (specify					number of trees

3 Total fresh apricot harvested **last year**

	Kg
	Number of trees (exclude trees that did not bear fruits last year)

% of fresh apricot affected by shot hole in the last year %

% wastage of fresh apricots **due to shot hole** (%) %


Total wastage of fresh apricots in the **last year** (%) %

4 Who did harvesting and grading of apricots last year

Harvest	<input type="text"/>	Family member	=1
Grade	<input type="text"/>	Buyer	=2
		Other (specify)=3

5 How did you harvest fresh apricots? And since which year have you practice that exercise?
(Multiple answers allowed)

	Put 1 if yes	Since which year have you exercised this practice?
Pick apricots by hand		
Drop them to the ground		
Put sheets on the ground		
Drop them to the trumporin		
Other (specify		

Image of trumporin → 

6 What are the quantities and values of fresh apricots you sold **last year** and to whom did you sell (by buyer)

Kg	From how many trees?	Total Rs.	To whom
			Local trader =1
			Trader in down country =2

- Local Market (wholesalers) =3
- Local Market (retailers) =4
- Down Country Market (wholesalers) =5
- Down Country Market (retailers) =6
- Other (specify) =7

7 What are the major problems you face in the apricot production and marketing?

1st	2nd

- Lack information on good varieties =1
- Deseases =2
- Insects =3
- Lack of technique/skill (specify if any) =4
- Labor shortage =5
- Land shortage =6
- Seedlings of good varieties are not available =7
- Other (specify) =8

8 Annual costs for fresh apricot production and marketing last year

Nursery plant		Rs.
Chemical fertilizer		Rs.
Organic fertilizer		Rs.
Pesticide		Rs.
Water charges		Rs.
Hired labor (pay in cash)		Rs.
Hired labor (pay in kind)		kg
Harvesting cost		Rs.
Packages		Rs.
Transportation cost		Rs.
Others ()		Rs.

→ Average daily wage		Rs./day
→ Kind of crop		

VI Technique for apricot production

1 Grafting

a) Have you done grafting since 2013?

Yes Put "1" if yes. Put "Don't know", if he does not know.

b) Have you or your family member attended the training (by JICA, DoA, and LSO) on grafting since 2013?

Yes Put "1" if yes. Put "Don't know", if he does not know.

If answer is yes, continue to ask the following questions. If answer is no, go to question d).

c) Do you do grafting in the way taught by the training?

Yes Put "1" if yes. Put "Don't know", if he does not know.

If no, what is the reason for not doing it?

- d) In which way do you do grafting in the last time? Please choose from the picture (1).
 In which year did you do grafting in the last time?

A	B	C	Other (specify)	<i>Put 1 for the choice</i>	Year _____

- e) Since which year have you applied the grafting method selected in (d)

Year _____

2 Pruning

- a) Have you or your family member attended the training (by JICA, DoA, and LSO) on pruning since 2013?

Yes *Put "1" if yes. Put "Don't know", if he does not know.*

If answer is yes, continue to ask the following questions. If answer is no, go to question c).

- b) Do you do pruning in the way taught by the training?

Yes *Put "1" if yes. Put "Don't know", if he does not know.*

If no, what is the reason for not doing it?

- c) Have you done pruning every year since 2013?

Yes *Put "1" if yes. Put "Don't know", if he does not know.*

- d) Which equipment do you use for pruning?

Ax	Saw	Other (specify)	<i>Put 1 for the choice</i>

- e) Please look at the picture (2) and tell us which form of tree is better for fruits production?

Also, please give us the reason why you choose A or B?

3 Did you do flower or fruit thinning last year?

Yes

4 Fertilizer: Have you put fertilizer to apricot trees in the last 12 months? If so, what kind of fertilizer did you apply?

- a) Applied fertilizer Yes *Put 1 if yes, otherwise leave it blank*

- b) Kind of fertilizer (*put 1 for the choice*)

Manure	Chemical Fertilizer	Bokashi	MML	Other (specify)

5 Pesticide and repellent: Have you applied chemical pesticide and/or non-chemical repellent to apricot trees last year

	Yes	<i>Put 1 if yes, otherwise leave it blank</i>
BCL		
MML		
Chemical pesticide		
Other(specify _____)		

6 Rootstock management

a) Have you or your family member attended the training (by JICA, DoA, and LSO) on rootstock management since 2013?

Yes *Put "1" if yes. Put "Don't know", if he does not know.*

b) Do you have young trees (5 years old or less)? If yes, please

Yes *Put 1 if yes, otherwise leave it blank*

c) Do you prune the young trees (5 years old or less)?

Yes *Put 1 if yes, otherwise leave it blank*

d) Do you provide water to young trees (5 years old or less)?

Yes *Put 1 if yes, otherwise leave it blank*

e) Do you use sucker for rootstock?

Yes *Put 1 if yes, otherwise leave it blank*

VII Apricot Products

A Dried apricot

1 Quantity of dried apricot production last year

	Made from your own fresh apricots	Bought fresh apricots from others	
Before drying			Kg
After drying			Kg

2 If you bought fresh apricots to dry, how much did you pay. And from whom you bought?

Rs. From whom you bought?

Trader	=1
Relative	=2
Neighbor	=3
Other (specify)	=4

3 How much % of dried apricots is wasted during the processing stage? %

4 What are the quantities and values of dried apricots sold last year? Specify by style, color, variety, and sulfuring.

Style (Turkish, Opend, guli, etc)	Color	Variety name (Habi, Ali sha kakas etc)	Sulpher ed (Y or N)	Quantity sold (Kg)	Total Value Sold (Rs.)	Price per Kg	To whom you sold	If sold to processor, please specify.

Local trader =1 *Down Country Market (wholesale)* =5
Trader in down country =2 *Down Country Market (retailers)* =6
Local Market (wholesalers) =3 *For export* =7
Local Market (retailers) =4 *Other (specify)* =8

5 Have you or your family member attended the training (by JICA, DoA, and LSO) on the following topics since 2011? And do you do these exercise in the way taught by the training? Also, if you do not do in the way taught by training, what is the reason?

	Put 1 if attended	Put 1 if you exercise in the way taught by training (if he did not attend)	Reason for not doing it in the way taught by training (if he did not attend training, skip this question)
Harvest			
Drying			
Grading			

6 How did you dry apricot last year? And since when have you use this equipment? Also, how did you get the equipment? (if given by any institution, please specify).

	Put 1 if yes	Since which year have you used this equipment?	How did you get the equipment	Specify the institution, if it is given
Dry on the stone				
Plastic tray				
Use willow				
Use wooden tray				
Use solar tunnel				

Given by some institution =1
Bought by yourself =2
Made by yourself =3

7 Did you grade dried arpicons? If so, how did you grade?

If yes, put 1 _____
 Graded dried apricot last year _____

How did you grade dried apricot? (Multiple answers allowed)

If yes, put 1

By color	
By size	
By variety	
By level of maturity	
By level of damage	
Other (specify)	

8 Did you do the following during the process of dried apricots? If yes, since which year have you been doing it?

	<i>If yes, put 1</i>	<i>Since which year have you been doing</i>
Wash fresh apricot before drying it	_____	_____
Wash hands before you cut fresh apricots	_____	_____
Use knife when cutting fresh apricots	_____	_____
Wear mask when processing	_____	_____
Wear globes when processing	_____	_____
Wear cap when processing	_____	_____
Take off accessories	_____	_____
Wash trays before drying	_____	_____

9 Costs for dried apricot production last year

		Total costs	Average lasting time (year)
Equipment	Willow		
	Wooden tray		
	Rack		
	Plastic cover for fumigation		
	Solar house		
	Others (specify)		
	Others (specify)		
	Others (specify)		
Running costs	Sulfer		/
	Fuel		
	Trasportataion costs from field		
	Hiring labor (cash)		
	Hiring labor (in kind)		
	Food for labor		
	Others (specify)		
	Others (specify)		
Others (specify)			

10 Cost for marketing dried apricots last year

Packages		Rs.
Transportation costs		Rs.
Other costs (specify)		Rs.
Other costs (specify)		Rs.

11 How do you store dried apricots? (Multiple answers are allowed)

Put 1 if yes

In willow basket	
In container	
In plastic bag	
Other (specify)	

12 What are the major problems you face in the dried apricot processing?

- Weather =1
- Lack of technique/skill (specify if any) =2
- Labor shortage =3
- Lack of equipment (specify if any) =4
- Other (specify) =5

1st	2nd

13 What are the major problems you face in the dried apricot marketing?

- Transportation problem (road blockage etc) =1
- Cost of transportation to down country =2
- Lack of market information in down country and local process (Mountain fruits, MSA etc) =3
- Low selling prices to buyers =4
- Lack of storage facilities/technique =5
- Labor shortage for harvesting and grading =6
- Other (specify) =7

1st	2nd

B Apricot kernel

1 How much apricot kernel did self-consume and sell **last year**?

		Quantity Self-consumed (kg)	Quantity Sold (kg)	Value Sold (Rs)	To whom you sold?
With shell	Sweet kernel	/ / / / / / / /			
	Bitter kernel	/ / / / / / / /			
Without shell	Sweet kernel				
	Bitter kernel				

- Local trader =1
- Trader in down country =2
- Local Market (wholesalers) =3

- Local Market (retailers) =4
- Down Country Market (wholesale) =5
- Down Country Market (retailers) =6
- Other (specify) =7

2 How did you crush the shells of kernel?

If yes, put 1

By crushing machine _____

By stone _____

Other (specify) _____

3 Production costs for apricot kernel (deshelling) **last year**

		Total costs	Average lasting time (year)
Equipment	Kernel cracker		
	Others (specify)		
	Others (specify)		
	Others (specify)		
Runnning costs			/

4 Cost for marketing apricot kernel **last year**

Packages		Rs.
Transportation costs		Rs.
Other costs (specify)		Rs.
Other costs (specify)		Rs.

5 What are the major problems you face in the apricot kernel production?

- Lack of technique/skill (specify if any) =1
- Labor shortage =2
- Lack of equipment (specify if any) =3
- Other (specify) =4

1st	2nd

6 What are the major problems you face in the apricot kernel marketing?

- Transportation problem (road blockage etc) =1
- Cost of transportation to down country =2
- Lack of market informaion in down country and local process (Mountain fruits, MSA etc) =3
- Low selling prices to buyers =4
- Lack of storage facilities/technique =5
- Labor shortage for harvesting and grading =6

1st	2nd

Other (specify) =7

C Apricot oil

1 How much apricot oil did you produce, self-consume, and sell last year?

	Quantity Produced (liter)	Quantity Self-consumed (liter)	Quantity Sold (liter)	Value Sold (Rs)	To whom you sold?
Sweet kernel					
Bitter kernel					

- Local trader =1
- Trader in down country =2
- Local Market (wholesalers) =3
- Local Market (retailers) =4
- Down Country Market (wholesalers) =5
- Down Country Market (retailers) =6
- Other (specify) =7

2 Production costs for apricot oil last year

		Total costs	Average lasting time (year)
Equipment	Apricot oil extractor		
	Filter		
	Others (specify)		
	Others (specify)		
Running costs			/

3 Cost for marketing apricot oil last year

Packages		Rs.
Transportation costs		Rs.
Other costs (specify)		Rs.
Other costs (specify)		Rs.

4 What are the major problems you face in the apricot oil production?

1st	2nd

- Lack of technique/skill (specify if any) =1
- Labor shortage =2
- Lack of equipment (specify if any) =3
- Other (specify) =4

5 What are the major problems you face in the apricot oil marketing?

1st	2nd

- Transportation problem (road blockage etc) =1
- Cost of transportation to down country =2
- Lack of market informaion in down country and local process (Mountain fruits, MSA etc) =3
- Low selling prices to buyers =4
- Lack of storage facilities/technique =5
- Labor shortage for harvesting and grading =6
- Other (specify) =6

6 Working hours of your family members for fresh apricot, dried apricot, apricot kernel and apricot oil production and marketing **last year**

Fresh apricot		Dry apricot		Apricot kernel		Apricot oil	
Family member (code)	Total working hours last year	Family member (code)	Total working hours last year	Family member (code)	Total working hours last year	Family member (code)	Total working hours last year

- Male, over 18 years of age =1
- Female, over 18 years of age =3
- Male, under 18 years of age =2
- Female, under 18 years of age =4

D Other apricot products

1 Have you or your family member attended the training for making apricot jam, juice, and/or concentrate given by DoA last year?

Yes Put 1 if yes, otherwise leave it blank
 If the answer is yes go to question 2, otherwise skip question 2.

2 Have you made these products at home in the way taught in the training?

Yes Put 1 if yes, otherwise leave it blank

If no, what is the reason? _____

VII Other

1 Do you do any cooperative works with other farmers?

	<i>Put 1 if yes</i>		
Collective purchase of inputs	<input type="checkbox"/>	→	What input ?
Harvest	<input type="checkbox"/>	→	Which product?
Marketing	<input type="checkbox"/>	→	Which product?
Processing	<input type="checkbox"/>	→	Which product?
Grading	<input type="checkbox"/>	→	Which product?
Packing	<input type="checkbox"/>	→	Which product?
Other (specify)	<input type="text"/>		

(For apple farmers)

Questionnaire for Household Interview

(Baseline Survey for GB Fruits Project)

Date

Village

Mohala

Household #

Enumerator's Name

Supervisor's Name

Tick if you checked

I Household

Updated Apr 22nd, 2015

*Household is a group of people who stay together and share a common kitchen. Budget may consist of several sources of income.

A Name of the respondent

Male respondent	
Female respondent	

son of	
daughter of	

B Family name

C Telephone number of respondent

D Name of the family head

E What is the age and gender of the family head?

Age	
Male=1/Female=2	

F The number of other family members (who live in the house currently. Exclude members who live outside house)

Number of Family Member	Male	Female
Under 17 of age		
Ager of 18-59		
Over 60 of age		

II Education

A What is the educational background of the family head?

- No formal education =1
- Primary school =2
- Secondary school =3
- Higher secondary school =4
- Graduate =5
- Master's =6
- Ph.D =7
- Others (specify) =8

III Major Source of Income

	1st	2nd	3rd
A What is the major source of income of your household?			
Agriculture farming	=1		
Livestock farming	=2		
Agricultural labor	=3		
Livestock labor	=4		
Other labor (specify _____)	=5		
Proving services (specify _____)	=6		

- Shop/Business =7
- Salaries from office work =8
- Land rent =9
- Room/building rent =10
- Remittance from family member outside of village =11
- Remittance from family member in foreign country =12
- Pension =13
- Other source (specify) =14

IV Asset holding

A What are the areas of agricultural land for each type?

	Cultivated land	Marginal land	Barren land
Owned and self cultivated (by family members)			kanal
Owned and rented out to tenants			kanal
Rented from landowner			kanal

B Number of fruits and nuts trees

	Apple	Apricot	Cherry	Peach	Parsi-mmon	Pear	Walnut	Almond	Other (specify)	Other (specify)	Other (specify)
# of trees											

C Livestock

(Adult if livestock is 2 years or older)

1: Cattle

	Female		Male	
	Adult	Baby	Adult	Baby
Number				

2: Yak

	Female		Male	
	Adult	Baby	Adult	Baby
Number				

3: Goat

	Female		Male	
	Adult	Baby	Adult	Baby
Number				

4: Sheep

	Female		Male	
	Adult	Baby	Adult	Baby
Number				

5: Chicken

Number	
--------	--

6: Other (sprcify

Number	
--------	--

7: Other (sprcify

Number	
--------	--

) 8: Other (sprcify

Number	
--------	--

V Apple production and marketing

1 Area harvested for apple production

Area owned and self-cultivated		kanal
Area rented in		kanal
Area rented out		kanal

2 Number of trees cultivated by variety

Name of variety	Total # of trees	Total # of trees bearing fruits every year	# of young trees that do not bear fuits yet	# of trees bearing alternate fruits
Golden delicious				

number of trees

Red delicious					number of trees
Starking delicious					number of trees
Starkrimson delicious (five star)					number of trees
Double red					number of trees
Discovery					number of trees
Granny smith					number of trees
Noor shah					number of trees
Goharn aman					number of trees
Fuji					number of trees
Tsugaru					number of trees
Other (specify					number of trees
Other (specify					number of trees
Other (specify					number of trees
Other (specify					number of trees

3 Total apple production in the last year Kg
 Number of trees (exclude trees that did not bear fruits last year)

4 Who did harvesting and grading of apples last year

Harvest Family member =1
Grade Buyer =2
Other (specify) =3

5 What are the quantites of apples you sold **last year** and to whom did you sell (by buyer)
Also, the sales was done by individually or collectively with other farmers?

Kg	From how many trees?	Rs.	To whom	Put 1 if collective

Local trader =1
Trader in down country =2
Local Market (wholesalers) =3
Local Market (retailers) =4
Down Country Market (wholesale) =5
Down Country Market (retailers) =6
Other (specify) =7

6 How many buyers/biders came to bid your apples **last year**?

7 In case that you sold whole orchard to one buyer **last year**, how much was the lowest and highest bid?
Highest bid Rs.
Lowest bid Rs.

8 How do you store apples? (multiple answers allowed)

Put 1 if yes. If he does not store apple, leave it blank.

For self-consumption	For sale
----------------------	----------

Containers/boxes		
Store rooms		
In the ground		
Dry		
Make powder		
Refrigerate		
Other (specify)		

9 What are the major problems you face in the apple production and marketing? Choose major 3 problems

	1st	2nd	3rd
Production			
Lack information on good varieties	=1		
Deseases	=2		
Insects	=3		
Lack of technique/skill (specify if any	=4		
Labor shortage	=5		
Land shortage	=6		
Seedlings of good varieties are not available	=7		
Other (specify	=8		
Marketing			
Transportation problem (road blockage etc)	=9		
Cost of transportation to down country	=10		
Lack of market informaion in down country	=11		
Low selling prices to buyers	=12		
Lack of storage facilities/technique	=13		
Labor shortage for harvesting and grading	=14		
Other (specify	=15		
Other (specify	=16		

VI Technique for apple production

1 Grafting

a) Have you done grafting since 2013?

Yes Put "1" if yes. Put "Don't know", if he does not know.

b) Have you or your family member attended the training (by JICA, DoA, and LSO) on grafting since 2013?

Yes Put "1" if yes. Put "Don't know", if he does not know.

If answer is yes, continue to ask the following questions. If answer is no, go to question d).

c) Do you do grafting in the way taught by the training?

Yes Put "1" if yes. Put "Don't know", if he does not know.

If no, what is the reason for not doing it?

- d) In which way do you do grafting in the last time? Please choose from the picture (1).
In which year did you do grafting in the last time?

A	B	C	Other (specify)	<i>Put 1 for the choice</i>	Year _____

- e) Since which year have you applied the grafting method selected in (d)

Year _____

2 Pruning

- a) Have you or your family member attended the training (by JICA, DoA, and LSO) on pruning since 2013?

Yes *Put "1" if yes. Put "Don't know", if he does not know.*

If answer is yes, continue to ask the following questions. If answer is no, go to question c).

- b) Do you do pruning in the way taught by the training?

Yes *Put "1" if yes. Put "Don't know", if he does not know.*

If no, what is the reason for not doing it?

- c) Have you done pruning every year since 2013?

Yes *Put "1" if yes. Put "Don't know", if he does not know.*

- d) Which equipment do you use for pruning?

Ax	Saw	Other (specify)	<i>Put 1 for the choice</i>

- e) Please look at the picture (2) and tell us which form of tree is better for fruits production?

Also, please give us the reason why you choose A or B?

3 Did you do flower or fruit thinning last year?

Yes

4 Fertilizer: Have you put fertilizer to apple trees in the last 12 months? If so, what kind of fertilizer did you apply?

- a) Applied fertilizer Yes *Put 1 if yes, otherwise leave it blank*

- b) Kind of fertilizer (*put 1 for the choice*)

Manure	Chemical Fertilizer	Bokashi	MML	Other (specify)

5 Pesticide and repellent: Have you applied chemical pesticide and/or non-chemical repellent to apple trees last year?

	Yes	<i>Put 1 if yes, otherwise leave it blank</i>
BCL		
MML		
Chemical pesticide		
Other(specify _____)		

6 Rootstock management

a) Have you or your family member attended the training (by JICA, DoA, and LSO) on rootstock management since 2013?

Yes *Put "1" if yes. Put "Don't know", if he does not know.*

b) Do you have young trees (5 years old or less)? If yes, please

Yes *Put 1 if yes, otherwise leave it blank*

c) Do you prune the young trees (5 years old or less)?

Yes *Put 1 if yes, otherwise leave it blank*

d) Do you provide water to young trees (5 years old or less)?

Yes *Put 1 if yes, otherwise leave it blank*

e) Do you use sucker for rootstock?

Yes *Put 1 if yes, otherwise leave it blank*

VII Costs and working hours for apple production

1 Annual costs (cash expenses) for apple production and marketing in the last year

Nursery plant		Rs.
Chemical fertilizer		Rs.
Organic fertilizer		Rs.
Pesticide		Rs.
Water charges		Rs.
Hired labor		Rs.
Harvesting cost		Rs.
Packages		Rs.
Transportation cost		Rs.
Others (_____)		Rs.

→ Average daily wage Rs./day

2 Working hours of your family members for apple production and marketing last year (including managerial and administrative work)

Family member (code)	Total working hours last year

Male, over 18 years of age =1
 Male, under 18 years of age =2

Female, over 18 years of age =3
 Female, under 18 years of age =4

VIII Other

Do you do any cooperative works with other farmers?

Put 1 if yes

Collective purchase of inp	<input type="checkbox"/>	→ What input ?	
Harvest	<input type="checkbox"/>	→ Which product?	
Marketing	<input type="checkbox"/>	→ Which product?	
Processing	<input type="checkbox"/>	→ Which product?	
Grading	<input type="checkbox"/>	→ Which product?	
Packing	<input type="checkbox"/>	→ Which product?	
Other (specify)			

添付資料 8: JCC 及びプロジェクト管理ミーティングの一覧

1. List of Joint Coordination Committee (JCC)

No	Year	Date	Venue	Number of Attendants						Agenda
				DoA	Private firm, NGO and LSO	Japanese Experts	Embassy of Japan	JICA	Total	
1	2012	October, 9	Gilgit	9	4	5	0	2	20	<ul style="list-style-type: none"> • Overview of the Project • Counterpart staff • Target Project Area • Security Arrangement
2	2013	April, 22	Gilgit	10	4	6	0	1	21	<ul style="list-style-type: none"> • Review and plan of the Project • Discussion on the capacity of the DoA nurseries, project scope, project monitoring, the Project budget for DoA by the Pakistani Government and the Project office in Hunza-Nagar.
3	2014	October, 30	Islamabad	10 (1)	4	1	1	3	19 (1)	<ul style="list-style-type: none"> • Project Outline • Achievement in the 1st and 2nd year and key activities in the 3rd year • Plan of the 3rd year and its progress • Issues and challenges • Revision of PDM

(Note) The number enclosed in parentheses indicates the number of women attended.

2. List of Project Management Meeting (August 2013 - December 2014)

No	Year	Date	Venue	Number of Attendants						Agenda
				DoA	Private firm, NGO and LSO	Japanese Experts	Embassy of Japan	JICA	Total	
1	2013	August, 15	Islamabad	3	0	1	0	0	4	<ul style="list-style-type: none"> • Progress of the Project • Activities from now up to the next spring
2	2013	October, 2	Islamabad	2	0	1	0	0	3	<ul style="list-style-type: none"> • Activities from now up to the next spring • Activities the next cropping season • Information sharing from DoA
3	2013	December, 19	Lahore	3	0	1	0	0	4	<ul style="list-style-type: none"> • Progress of the Project • Activities from now up to the next spring • Activities the next cropping season • Information sharing from DoA

4	2014	February, 28	Islamabad	3	0	1	0	0	4	<ul style="list-style-type: none"> •Progress of the Project •Activities from now up to the next spring •Activities the next cropping season
5	2014	May, 28	Islamabad	3	0	1	0	0	4	<ul style="list-style-type: none"> •Progress of the Project •Assigned tasks to DoA counterparts •Activity plan of the 3rd project year
6	2014	August, 27	Islamabad	10	0	3	0	1	14	<ul style="list-style-type: none"> •Progress of the Project •Activities to be implemented from now in this year •Activities from now up to the next spring
7	2014	October, 31	Islamabad	9 (1)	0	4	0	0	13 (1)	<ul style="list-style-type: none"> •Progress of the Project •Activities from now up to the next spring
8	2014	December, 20	Islamabad	4	0	1	0	0	5	<ul style="list-style-type: none"> •Progress of the Project •Activities from now up to the next spring

(Note) The number enclosed in parentheses indicates the number of women attended.

添付資料 9: プロジェクトサイトにおけるセミナー

No.	Year	Training Course Title	Place	Lecturers / Training institutes	Period		Number of Trainee								
					From	To	DoA		Farmer/LSO		Private firm		M	F	Total
							M	F	M	F	M	F			
1	2012	Grading and packing of apples	Hunza-Nagar	Mushtaq Brother Co, Apple trader	2012/10/25	2012/10/25	1	0	45	0	0	0	46	0	46
2	2013	Grading and packing of apples	Hunza-Nagar	Ajab Gull, Fruit trader	2013/9/24	2013/9/28	7	0	36	185	0	0	43	185	228
3	2014	Apricot processing	Aliabad	Mr. Zulfiqar Ali Ghazi, local expert	2014/8/1	2014/8/6	0	0	34	182	0	0	34	182	216
4	2014	Grading and packing of apples	Hunza-Nagar	Ajab Gull, Fruit trader	2014/9/22	2014/9/28	18	4	79	220	0	0	238	83	321
5	2014	Extension skill	Islamabad	ECI (Pvt) Ltd	2014/12/15	2014/12/20	2	1	9	0	0	0	11	1	12
6	2015	Extension skill	Gilgit	ECI (Pvt) Ltd	2015/6/1	2015/6/5	3	0	16	2	0	0	19	2	21
Total							31	5	219	589	0	0	391	453	844
Grand Total							36		808		0		844		

添付資料 10: 現地専門家による研修

No.	Year	Title of Seminar / Training	place	Period			Number of Trainee								
				From	To	Duration	DoA		Farmer/LSO		Private firm		M	F	Total
							M	F	M	F	M	F			
1	2012	Apricot Cultivation	Core farmer's orchard, Aliabad	2012/10/22	2012/10/22	1	2	1	5	12	0	0	7	13	20
2	2012	Apple Cultivation	Core farmer's orchard, Hyderabad, PTDC Motel Hunza, Trader's field, Aliabad	2012/10/25	2012/10/25	1	3	2	22	3	0	0	25	5	30
3	2012	Marketing & Fruit Processing	PTDC Motel Hunza	2012/10/30	2012/10/30	1	6	1	21	20	2	0	29	21	50
4	2013	Return Workshop on Pruning and Grafting Training, Japan in Hunza-Nagar	Hunza Embassy, Karimabad	2013/3/30	2013/3/30	1	5	2	34	10	0	0	39	12	51
5	2013	Fruits Marketing Seminar Report on Marketing Exposure and Training in Japan and Workshop	Hunza Embassy, Karimabad	2013/4/13	2013/4/13	1	10	1	34	14	9	0	53	15	68
6	2013	JICA-DoA Fruit Seminar April 2013 Report & Demonstration on the Result of Training in Japan -Pruning, Grafting, and Marketing	Mehdiabad, Skardu	2013/4/18	2013/4/18	1	8	0	32	0	0	0	40	0	40
7	2013	Seminar of Organic Fertilizer and Insect Repellent	Dilan Guest House, Minapin-Nagar	2013/4/27	2013/4/27	1	4	0	72	0	0	0	76	0	76
8	2013	Organic Agriculture and Thinning Fruits Seminar	Golden Jubilee LSO office yard, Baltit Inn, Karimabad	2013/5/11	2013/5/11	1	4	1	11	66	4	0	19	67	86
9	2013	Return Seminar (Cultivation) by the 2nd session Trainees of the Japan Training	PTDC Motel Hunza, Fazal Karim's orchard in Karimabad	2013/6/14	2013/6/14	1	15	1	39	62	4	0	58	63	121
10	2013	Seminar: Report on Marketing Training in Japan by the 2nd session Trainees	Hunza Embassy, Karimabad	2013/6/24	2013/6/24	1	8	2	13	24	5	0	26	26	52

11	2013	Return Seminar by the 2nd and 3rd session Trainees of the Japan Training	DoA Nursery	2013/8/1	2013/8/1	1	11	0	42	0	0	0	53	0	53
12	2013	Return Seminar (Cultivation) by the 3rd session Trainees of the Japan Training	PTDC Motel Hunza	2013/8/5	2013/8/5	1	7	1	24	45	1	0	32	46	78
13	2013	Return Workshop on Farmers Exposure Visit to Swat in Hunza Naga	Hunza Nagar	2013/11/20	2013/11/21	2	21	4	84	51	14	0	119	55	174
14	2014	Return Workshop on Apricot Market Survey Lahore, in Hunza-Nagar	Hunza Embassy Hotel	2014/1/20	2014/1/20	1	11	2	44	45	7	0	62	47	109
15	2014	Return Seminar on Food-Ex 2014 Japan, in Hunza Nagar	Hunza Embassy Hotel	2014/2/5	2014/2/5	1	7	2	44	37	2	0	53	39	92
16	2014	Return Workshop on Apricot Market Survey Lahore, Skardu	Mehdiabad LSO	2014/2/10	2014/2/10	1	6	0	34	0	0	0	40	0	40
17	2014	Return Seminar on Apple Cultivatioon-1 Japan, in Hunza-Nagar	Hunza Embassy Hotel	2014/9/5	2014/9/6	2	18	4	62	78	14	0	94	82	176
18	2014	Return Seminar on Apricot Cultivatioon-1 Japan, in Skardu	Mehdiabad LSO	2014/9/18	2014/9/18	1	16	0	41	0	0	0	57	0	57
19	2014	Post harvesting training of Apple through Agriculture department Hunza Nagar	Minapin, Nasirabd, Aliabad, Hyderabad, Karimabad, Garelt, Khan altit	2014/9/22	2014/9/28	7	18	4	79	220	0	0	97	224	321
20	2014	Return Seminar on Market Survey in Down Market, Food Processing Training in Thailand, SIAL Pairs Expo	Mehdiabad LSO	2014/11/29	2014/11/29	1	8	0	27	0	0	0	35	0	35
21	2014	Return Seminar on SIAL Paris Food Expo, 2014 in Hunza-Nagar	Hunza Embassy Hotel	2014/12/3	2014/12/3	1	6	2	34	43	3	0	43	45	88
22	2014	Return Seminar on Apple & Apricot Market Survey in Hunza-Nagar & Skardu	Hunza Embassy Hotel	2014/12/3	2014/12/3	1	15	2	31	36	4	0	50	38	88
23	2014	Return Seminar on Advance Marketing in Hunza-Nagar	Hunza Embassy Hotel	2014/12/4	2014/12/4	1	18	2	49	51	9	0	76	53	129
24	2014	Return Seminar on Apple Cultivatioon-2 in Hunza-Nagar	Hunza Embassy Hotel	2014/12/11	2014/12/11	1	8	2	35	41	2	0	45	43	88

25	2014	Return Seminar on Agriculture Extension Skill Training in Islamabad (ECI), in Skardu, Mehdiabad	Mehdiabad LSO	2014/12/29	2014/12/29	1	4	0	33	0	0	0	37	0	37
26	2015	Return Seminar on Agriculture Extension Skill Training in Islamabad (ECI), in Hunza-Nagar	Hunza Embassy Hotel	2015/1/5	2015/1/5	1	8	2	42	33	4	0	54	35	89
27	2015	Seminar on young tree management	LSO GOLD	2015/4/15	2015/4/15	1	2	2	31	26	0	0	33	28	61
28	2015	Seminar on young tree management	RDO	2015/4/15	2015/4/15	1	2	0	23	0	0	0	25	0	25
29	2015	Seminar on grafting and sulfur-lime mixture	Hunza Serena inn, HRSO	2015/4/16	2015/4/17	2	3	1	18	41	0	0	21	42	63
30	2015	Seminar on grafting and sulfur-lime mixture	RLSO	2015/4/21	2015/4/21	1	3	0	68	0	0	0	71	0	71
31	2015	Seminar on grafting, fruit thinning, and processing	DoA Nursery, Mehdiabad	2015/4/25	2015/4/25	1	3	0	22	6	0	0	25	6	31
32	2015	Seminar on MML, BCL, Boudreaux mixture, Bokashi	LSO GOLD	2015/4/28	2015/4/28	1	4	2	76	43	10	0	90	45	135
33	2015	Seminar on grafting, MML, BCL, sulfur-lime mixture, Boudreaux mixture, Bokashi	MASO	2015/4/30	2015/5/1	2	5	0	45	88	0	0	50	88	138
34	2015	Seminar on Thinnng, BCL.sufur -lime and light trape	RLSO	2015/5/12	2015/5/12	1	6	0	39	0		0	45	0	45
35	2015	Semainr on Thingg, BCL.sufur -lime and light trape	ARSO	2015/5/19	2015/5/19	1	15	2	51	85	3	0	69	87	156
Total						45	290	45	1,361	1,180	97	0	1,748	1,225	2,973
Grand total							335		2,541		97		2,973		

添付資料 11: 提案された PDM (Ver.3)

<p>Title of the Project: Promotion of Value Added Fruit Products in Gilgit-Baltistan, Pakistan Term of Cooperation: 4 years from the arrival of the Japanese expert(s) Project Area: Gilgit-Baltistan Target Group: The farmers in the Project Area (* Pilot LSOs: BRSO, HRSO, LSO GOLD, RDO, RLSO, MASO, ARSO and GRSSO) Implementing Organization: Department of Agriculture (DoA)</p>	<p>PDM-1 (Ver: 1) was prepared on 2011/07/19 PDM-1 (Ver: 2) was prepared on 2014/10/30 PDM-1 (Ver: 3) was prepared on 2015/06/26</p>
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Narrative Summary	Verifiable Indicators	Means of Verification	Important Assumption
<p>Overall Goal Production and marketing of apricot products and apples are improved in the project area</p>	<p>Sale amount of dried apricots and apples in Hunza-Nagar district in 2016 is increased more than 15% in 2018.</p>	<p>Gilgit-Baltistan Agriculture Statistics Survey Report</p>	
<p>Project Purpose Production and sales of high quality apricot products and apples are increased in the pilot areas.</p>	<p>1. Total quantity of A-graded dried apricots which are produced by the farmers in the project sites (the sub-villages where the core farmer reside) is increased by 15%. (A-graded dried apricots will be determined every year based on the result of interviews with farmers and traders. Unit prices of A-graded dried apricot are 120 PKR/Kg for opened style and PKR180/Kg for Turkish Style and Guli in the first year.) (Total sales volume was 1,350Kg (221 sample households) in the first year) 2. Apricot kernels and kernel products which are produced by the farmers in the pilot LSOs is exported. (Total sales volume in PKR in the first year will be collected at the and baseline survey.) 3. 80% of apples sold at Rawalpindi wholesale market through marketing research are graded S3 as average**. (Grade was S1 in the first year.) (** At least three wholesalers grade the apples and calculate the average. *Targeted figure “30%” is to be reconsidered as of the mid-term review.</p>	<p>Commodity chain survey</p>	<ul style="list-style-type: none"> • Priority of fruit production for the farmers in the project area remains high. • Trained extension officers in the project area transfer their skills and knowledge to the farmers. • Market conditions for value-added fruit products will not drastically worsen. • Natural disaster affecting fruit production will not occur.
<p>Output 1. Production and marketing of apricot products are improved.</p>	<p>1-1. Manuals for cultivation, processing and marketing. 1-2. The percentages of farmers in the pilot LSOs who apply the following technique in cultivation and processing as per guidance by the Project reach to the indicated numbers (percentages of farmers who apply these techniques before the project start are 0%).</p> <ul style="list-style-type: none"> • Root stock management (40%) • Grafting (40%) • Pruning (40%) • Pesticide application (40%) • Fertilization (40%) • Processing (30%) 	<p>1. Manuals for cultivation, processing and marketing are made 2. Project documents 3. Commodity chain survey</p>	<ul style="list-style-type: none"> • Priority of fruit production for the farmers in the project area remains high. • Market conditions for value-added fruit products will not drastically worsen. • Natural disaster affecting fruit production will not occur. • Stakeholders of the Project (dried fruits processors and fruits traders) will provide necessary cooperation.

<p>2. Production and marketing of apples are improved.</p>	<p>1-3. Marketing plan (including regional branding plan, etc.) for apricot products is developed focusing on sustainable farmers' income generation.</p> <p>2-1. Making manuals for cultivation, processing and marketing.</p> <p>2-2. The percentages of farmers in the pilot LSOs who apply the following technique in cultivation as per guidance by the Project reach to the indicated numbers (Percentages of farmers who apply these technique before the project start are 0%).</p> <ul style="list-style-type: none"> • Disbudding and thinning fruits :50% • Grafting :50% (Recognition on the proper timings of cleft grafting, side grafting, and bud grafting are the main training targets.) • Seeding production :50% • Pruning :50% • Pesticide application :50% (Introduction of organic pesticide) • Application of newly introduced organic fertilizer :50% <p>2-3. 100% of core farmers in the pilot areas record the amount of apple produced and sold.</p> <p>2-4. The number of farmers who harvest, grade and pack for themselves is increased by 10%. (19 % (49HHs) of farmers harvested for themselves and 9% (21HHs) of them graded for themselves in the first year.) (Ratio of farmers packed their apples in the first year will be collected at the mid-term survey.)</p> <p>2-5. Marketing plan (including regional branding plan, etc.)for apple is developed focusing on sustainable farmers' income generation.</p>		
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Activity	Inputs		
	Japanese Side	Pakistani Side	
<p>1-1. Select the pilot areas and the core farmers.</p> <p>1-2. Introduce and disseminate the market research methods through the extension officers and the core farmers.</p> <p>1-3. Identify the varieties suitable for high quality dried apricot.</p> <p>1-4. Disseminate the appropriate cultivation techniques (combination of early and late varieties, grafting, shoot training, pruning, thinning, harvesting, fertilization, etc.) through the extension officers and the core farmers.</p> <p>1-5. Introduce and disseminate the standards of specifications and quality control methods for dried apricots and other products through the extension officers and the core farmers.</p> <p>1-6. Develop and disseminate the appropriate processing facilities, equipment and methods for dried apricots and other products through the extension officers and the core farmers.</p> <p>1-7. Promote the dried apricots and other products in international and domestic markets in cooperation with the private organizations (e.g., branding, exhibition, certification, etc.).</p> <p>1-8. Develop the manuals of cultivation, processing and marketing for the extension officers and the farmers.</p>	<p>1. Experts</p> <p>(1) Team Leader/Training 1</p> <p>(2) Marketing</p> <p>(3) Fruit cultivation (Apple)</p> <p>(4) Fruit cultivation (Apricot)</p> <p>(5) Fruit processing</p> <p>(6) Project coordinator/Training 2</p> <p>Local consultants, if necessary</p> <p>2. Equipment / Machinery</p> <p>• Office equipment and others, if necessary</p> <p>3. Training in Japan</p> <p>• Training on cultivation, processing and marketing</p>	<p>1. Project Staff</p> <p>• counterpart personnel</p> <p>2. Facilities / Buildings</p> <p>• Office space and necessary facilities for the Japanese experts</p> <p>3. Expenses</p> <p>• Necessary recurrent costs such as staff salaries and allowances, fuels, transportation, and utility charges</p>	<ul style="list-style-type: none"> • Farmers in pilot areas are willing to participate in the Project. • Trained DoA staff stay at their positions.
<p>2-1. Select the pilot areas and the core farmers.</p> <p>2-2. Introduce and disseminate the market research methods through the extension officers and the core farmers.</p> <p>2-3. Identify the varieties suitable for high quality apple.</p> <p>2-4. Disseminate the appropriate cultivation techniques (combination of early and late varieties, grafting, shoot training, pruning, thinning, harvesting, fertilization, etc.) through the extension officers and the core farmers.</p> <p>2-5. Introduce and disseminate the standards of specifications and quality control methods for apples through the extension officers and the core farmers.</p> <p>2-6. Develop and disseminate the appropriate grading and packaging methods for apples through the extension officers and the core farmers.</p> <p>2-7. Promote the apples in international and domestic markets in cooperation with the private organizations (e.g., branding, exhibition, certification, etc.).</p> <p>2-8. Develop the manuals of cultivation, processing and marketing for the extension officers and the farmers.</p>			<p>Pre-conditions</p> <ul style="list-style-type: none"> • Necessary budget for the activities of DoA is secured. • Security situation in the project area remains stable.

添付資料 12: PDM の改訂

	Ver. PDM-2 (Current)	Ver. PDM-3 (Proposed)	Reasons/ Justifications
Project Purpose			
Indicators for Project Purpose	1. Total quantity of A-graded dried apricots which are produced by the farmers in the project sites (the sub-villages where the core farmer reside) is increased by 30%.	1. Total quantity of A-graded dried apricots which are produced by the farmers in the project sites (the sub-villages where the core farmer reside) is increased by 15% .	➤ The Project will experience two (2) processing seasons instead of four (4) processing seasons that are originally assumed in starting the Project. Increase rate of total quantity in percentage will be determined as 15% instead of 30% since the Project will experience a half as many harvesting seasons as originally assumed.
	2. Total sales volume of apricot kernels, kernel products, apricot oil and oil products which are produced by the farmers in the pilot LSOs is increased by 30%.	2. <u>Apricot kernels and kernel products which are produced by the farmers in the pilot LSOs is exported.</u>	➤ A new indicator intending to produce and export quality apricot kernel products will be defined so as to exemplify the marketability of the products for the international market and DCM. ➤ It is not suitable to include apricot oil into the indicator of apricot products for sale, because most of apricot oil is used for domestic consumption in the project site traditionally.
Output			
Indicator for Output 1	1-2.The percentages of farmers in the pilot LSOs who apply the following technique in apricot cultivation and processing as per guidance by the Project reach to the indicated numbers. <ul style="list-style-type: none"> • Root stock management (50%) • Grafting (50%) • Pruning (50%) • Pesticide application (50%) • Fertilization (50%) • Processing (50%) 	1-2.The percentages of farmers in the pilot LSOs who apply the following technique in apricot cultivation and processing as per guidance by the Project reach to the indicated numbers. <ul style="list-style-type: none"> • Root stock management (<u>40%</u>) • Grafting (<u>40%</u>) • Pruning (<u>40%</u>) • Pesticide application (<u>40%</u>) • Fertilization (<u>40%</u>) • Processing (<u>30%</u>) 	➤ It is not necessary to refer to apricot as cultivation crops to which cultivation and processing techniques can be applied. ➤ During the period while Japanese experts were prohibited to visit the GB area, less opportunities of technology transfer on apricot cultivation and fruit processing were given to the Pakistani side comparing to apple cultivation. Therefore, percentages of farmers practicing transferred technologies of apricot are expected to be lower levels than those of apple farmers. ➤ For reflection of actual situation on application of techniques, it is necessary to make modifications on

			questions of end line survey regarding processing and fertilization in the questionnaire.
Indicator for Output 2	2-2. The percentages of farmers in the pilot LSOs who apply the following technique in cultivation as per guidance by the Project reach to the indicated numbers	2-2. The percentages of farmers in the pilot LSOs who apply the following technique in apple cultivation as per guidance by the Project reach to the indicated numbers	➤ It is not necessary to refer to apple as cultivation crops to which cultivation and processing techniques can be applied.
	2-3. The number of farmers in the project site who record the amount of apple produced and sold is increased by 20%.	2-3. <u>100% of core farmers in the pilot areas record the amount of apple produced and sold.</u>	<ul style="list-style-type: none"> ➤ It was found out that farmers in the pilot area do not have a balance; therefore, they cannot measure the weight of their products correctly. ➤ So as to demonstrate the possible advantage and its necessity of recording their transactions of apples, a new indicator showing all the core farmers are required to record the amount of apple produced and sold will be defined.
Project Activities			
Activities	1-5 Introduce and disseminate the standards of specifications and quality control methods for dried apricots, apricot oil and	1-5. Introduce and disseminate the standards of specifications and quality control methods for dried apricots and other apricot	➤ It is necessary to include jam, juice, sweets as well as apricot oil and kernel nuts in potential apricot products for the remaining period of implementation.

	kernel nuts through the extension officers and the core farmers.	products through the extension officers and the core farmers.	
	1-6 Develop and disseminate the appropriate processing facilities, equipment and methods for dried apricots, apricot oil and kernel nuts through the extension officers and the core farmers	1-6 Develop and disseminate the appropriate processing facilities, equipment and methods for dried apricots and other apricot products through the extension officers and the core farmers.	➤ It is necessary to include jam, juice, sweets as well as apricot oil and kernel nuts in potential apricot products for the remaining period of implementation.
	1-7. Promote the dried apricots and apricot oil in international and domestic markets in cooperation with the private organizations (e.g., branding, exhibition, certification, etc.).	1-7. Promote the dried apricots and other apricot products in international and domestic markets in cooperation with the private organizations (e.g., branding, exhibition, certification, etc.).	➤ It is necessary to include jam, juice, sweets, as well as apricot oil and kernel nuts in potential apricot products for the remaining period of implementation.
Others			
Name of Pilot LSOs	Pilot LSOs: BR S O, HR S O, L S O G O LD, R D O, and R L S O	Pilot LSOs: BR S O, HR S O, L S O G O LD, R D O, R L S O , MASO , ARSO and GRSO	➤ The description will be modified in response to the addition of three (3) new pilot LSOs in April 2015.

13. 中間レビューミッション日程

添付資料 13: 中間レビューミッション日程

		Mr. Kawasaki	Mr. Amir Bukhari	Mr. Akira Ogasawara	Dr. Watanabe	Dr. Hirashima and Mr. Hamano
10-Jun	Wed			from NRT to BKK (TG643)/from BKK to ISB (TG349)		Participation to other mission
11-Jun	Thu		9:30-10:00 Meeting with JICA 10:30-11:30 MNFSR 1200-1300 MKAGB 1430-1530 MPD			Participation to other mission
12-Jun	Fri		Documentation			10:00-12:00 Meeting with Mr. Kawasaki JICA Pakistan
13-Jun	Sat			Moving to Gilgit (by Vehicle)	from NRT to BKK (TG643) from BKK to ISB (TG349)	Documentation
14-Jun	Sun				Documentation	
15-Jun	Mon			10:00-13:00 Meeting with DOA Afternoon Interview with JICA expert, Core farmers and CPs	Documentation	
16-Jun	Tue			9:30 Meeting with P&D 11:00 Processing Company (Gaba Highland Fruit) 14:00 Processing Company (Organo Botanica) 15:30 Moving to Hunza	Moving to Gilgit (by Vehicle)	
17-Jun	Wed			Interview with DOA officers (Interview with Japanese experts)	Moving to Gilgit (by Vehicle)	
18-Jun	Thu			Interview with LSO management staff, core farmers, extension personnel and the neighboring Fs 14:00 Golden LSO (apricot), 16:00 Visit RDO (Shia area)	Dr. Hirashima, Dr. Watanabe, and Mr. Hamano 10:00-10:30 Visit to Organo Botanica 11:00-11:30 Courtesy call to Secretary and Director of DoA 13:00 Processing Company (Gaba Highland Fruit) 14:30 Mountain Area Research Center, Jaglot, Gilgit, 16:00 Observation of the training on processing	
19-Jun	Fri			Interview with LSO management staff, core farmers, extension personnel and the neighboring Fs 10:00 Visit BRSO (Apple), 14:00 Visit HRSO (Apple)		
20-Jun	Sat			Interview with LSO management staff, core farmers, extension personnel and the neighboring Fs 10:00 RLSO (apple), 14:00 DOA Nursery		
21-Jun	Sun	Flight to Gilgit(PK607) Move to Hunza Nagar		Documentation		
22-Jun	Mon			10:00 Golden LSO 13:00 Hunza Dry Fruit (Processing company in Hunza) 14:00 ARSO Drafting evaluation report 18:00 Internal meeting		
23-Jun	Tue			8:00-10:00 Moving to Upper Hunza 10:00 MASO 14:00 GRISO(including Morkhun village) 16:00-18:00 Moving to Karimabad		
24-Jun	Wed			10:00 Visit RDO 15:00 Moving to Gilgit, Documentation		
25-Jun	Thu			10:00 and 15:00 Meeting with DoA and P&D to explain the result of evaluation 11:30 Discussion on joint review report		
26-Jun	Fri			11:00 JCC, Minutes signing on review report Memorial tree Planting		
27-Jun	Sat			Moving to Islamabad from Gilgit (by PK608)		
28-Jun	Sun			Documentation		
29-Jun	Mon			Report to Embassy of Japan		
30-Jun	Tue			Documentation Meeting within the mission		
1-Jul	Wed			from ISB to BKK (TG350)		
2-Jul	Thu			from BKK to NRT (TG676)		

14. 主要面談者リスト

添付資料 14: 主要面談者リスト

- 在パキスタン日本国大使館
 - 猪俣 弘司 特命全権大使
 - 松浦 純也 公使
 - 鴨志田 尚昭 参事官
 - 黒田 裕一 一等書記官
- ギルギット・バルティスタン地域高付加価値果樹産品振興プロジェクト
 - 町田 賢一 総括
 - 合原 裕人 果物加工
 - 内田 量人 サプライチェーン・マネジメント
 - Mr. Muhammad karim Project Coordinator
- Ministry of National Food Security and Research
 - Mr. Syed Mozzam Ali Joint Secretary
 - Mr. Arshan Zahid Section Officer
- Agriculture Poly-technique Institute, National Agriculture Research Institute Centre
 - Dr. Khalid Farooq Director
- Ministry of Planning and Development
 - Dr. Aamer Irshad Chief of Agriculture
- Ministry of Kashmir Affairs and Gilgit Baltistan
 - Mr. Qazi Zaheer Ahmad Joint Secretary
- ギルギット・バルティスタン政府農業局(DoA) (C/P)
 - Mr. Khalid Mehmood Secretary of Agriculture
 - Dr. Fazal Rehman Director Agriculture
 - Mr. Ghulam Mustafa Deputy Director Agriculture Projects
 - Mr. Javed Akhtar Deputy Director Agriculture
 - Mr. Abdullah Khan Deputy Director Agriculture Training
 - Mr. Javeed Karim Agricultural Officer
 - Ms. Samina Shaheen Agricultural Officer
 - Mr. Raja Muzaffar Wali Deputy Director Agriculture
 - Mr. Hamid Hussain Agricultural Officer
 - Mr. Ramza Ali Agricultural Assistant
 - Mr. Humammad Yunas Field Assistant
- High Land Gaba Fruits Pvt. Ltd.
 - Mr. Feroz Ali Gaba Chairman, Gaba Group Companies
 - Mr. Shahid Karim Production Manager, Highland Gaba Foods Pvt. Ltd.
 - Mr. Tanveer Ahmed Abbasi Consultant, Field Technologist
- Organo Botanica
 - Mr. Akhter Hussain Manager
- Hunza Dry Fruits
 - Mr. Essa Khan Production Manager
 - Ms. Mehreen Zhadi Supervisor
- Vocational and Technical Training Center in Hunza-Nagar
 - Mr. Zulfiqar Ali Gazhi Principal, Vocational and Technical Training Center in Hunza-Nagar
- Golden Jubilee Organization for Local Development (GOLD)
 - Mr. Ahmed Naygar Manager

- | | |
|--------------------|---|
| Mr. Imam yar Baig | Director and Agriculture Coordinator |
| Ms. Perveen Akhter | Director LSO and General Secretary New Jubilee Women Organization |
| Mr. Javid Karim | Project Coordinator, Civic Management Society (CMS) |
| Mr. Danish Mehboob | Social Mobilizer |
| Ms. Husson Bano | Core farmer |
| Ms. Meher Nighar | Core farmer |
| Mr. Amin Khan | Core farmer |
- Rakaposhi Development Organization (RDO)
- | | |
|----------------------|------------------|
| Mr. Muhammad Akbar | Vice Chairman |
| Mr. Muhammad Ali | Manager |
| Mr. Sajjad Akbas | Marketing farmer |
| Mr. Ameer Gui | BoD |
| Mr. Abdul Ramnen | BoD |
| Mr. M. Hussain | BoD |
| Mr. Douail Ali | BoD |
| Mr. M. Hassan | BoD |
| Mr. Ejaz Anmed | BoD |
| Mr. Yawar Abbas | Core-farmer |
| Mr. Muhammad Hussain | Core-farmer |
| Ms. Akhtar Jabeen | Member |
| Ms. Shalida | Member |
- Baltit Rural Support Organization (BRSO)
- | | |
|------------------|-----------------------|
| Mr. Noor Khan | Chairman |
| Mr. Ali Hadad | VO Ulobari, BoD |
| Mr. Abdullah Jan | VO Astana, BoD |
| Mr. Naseer Uddin | VO Brongshell, BoD |
| Ms. Malika Fozie | President, WO Gaimers |
| Mr. Fazal Karim | Core farmer |
| Mr. Haji Karim | Core farmer |
| Ms. Lal Shahzadi | Extension person |
| Mr. Sifat Alam | Extension person |
| Mr. Karim | Farmer, VO Aste |
- Hyderabad Rural Support Organization (HRSO)
- | | |
|---------------------|-----------------------|
| Mr. Ejaz Karim | BoD, Extension person |
| Mr. Rahmat Karim | Core farmer |
| Mr. Aman Ullah Khan | Core farmer |
| Ms. Ali Yasmin | Management staff |
| Ms. Gul Mahoot | Member, WO Barbar |
| Ms. Sunoloen | Member, WO Barbar |
| Ms. Chand Bibi | Member, WO Barbar |
| Ms. Shereen | Member, WO Shababad |
| Ms. Zaibu Bair | Member, WO Shababad |
- Rakaposhi Local Support Organization (RLSO)
- | | |
|----------------------------|-------------|
| Mr. Yawar Hussain | Chairman |
| Mr. Asrar Hussain | Manager |
| Mr. Muhammad Ishaq Hussain | Core farmer |
| Mr. Ahmed Ali Shah | Core farmer |
- Mountain Area Support organization (MASO)
- | | |
|-------------------|---------------|
| Mr. Abdul Rashid | Chairman |
| Mr. Shaukat Ali | Vice Chairman |
| Mr. Saleem Harder | Director |

- | | |
|------------------|-------------------------------------|
| Ms. Bibi Miraj | Director |
| Ms. Naibul Shah | Director |
| Mr. Khuram Shaf | Director |
| Mr. Majeed Uuah | Manager |
| Mr. Firasat Shah | Leading farmer |
| Mr. Barakat Ali | Core farmer |
| Ms. Malika Begun | Extension Person |
| Ms. Lal Ajayab | President Woman Organization Gulmit |
- Gojal Area Rural Support Organization (GRSO)
- | | |
|---------------------|--|
| Mr. Khursheed Ahmed | Chairman |
| Ms. Meher Kamir | Vice Chairman |
| Mr. Amir Baig | General Secretary |
| Mr. Sherbaz | Social Organizer |
| Mr. Nisar Hussain | Coordinator of PCF, education & social development |
- Mehdiabad Local Support Organization (MLSO)
- | | |
|----------------------|-------------|
| Mr. Muhammad Hussain | Core-farmer |
| Mr. Muhammad Ali | Core-farmer |
- Altit Rural Support Organization (ARSO)
- | | |
|-------------------|---|
| Mr. Ali Madad | Vice Chairman |
| Mr. Karim Khan | Manager |
| Mr. Ali Pana | LSO Board Member |
| Mr. Muhammad Shah | LSO Board Member |
| Mr. Haji Karim | LSO Board Member |
| Mr. Tawakal Shah | LSO Board Member |
| Ms. Bi Bi Maryam | President SELIZEEN TANZEEM Women Organization |
- Ksan LSO
- | | |
|-------------------|--------------------------------------|
| Ms. Samana Batool | President, Meraji Women Organization |
| Ms. Nadia | Social Organizer |

