トルコ国
中央アジア・中東向け
自動制御技術普及プロジェクト
詳細計画策定調査報告書

平成24年11月
（2012年）

独立行政法人国際協力機構
トルコ事務所

トル事
JR
12-001

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序　　文

日本国政府は、トルコ共和国政府の要請に基づき、トルコ共和国中央アジア・中東向け自動制御技術普及プロジェクトを実施することを決定し、独立行政法人国際協力機構がこのプロジェクトを実施することとしました。

当機構はプロジェクト開始に先立ち、本プロジェクトを円滑かつ効果的に進めるため、平成 23 年 11 月 14 日から同年 11 月 18 日までの 5 日間、当機構トルコ事務所次長高田浩幸を団長とする詳細計画策定調査団をトルコ国に派遣しました。

調査団は本プロジェクトの背景を確認するとともに、トルコ国政府の意向を聴取し、本プロジェクトに関する協議議事録に署名しました。

本報告書は、今回の調査を取りまとめるとともに、引き続き実施を予定しているプロジェクトに資するためのものです。

終わりに、調査にご協力とご支援をいただいた関係各位に対し、心より感謝申し上げます。

平成 24 年　11 月

独立行政法人　国際協力機構
トルコ事務所
所長　斉藤　顕生

写　　真

教員研修センター外観

教員研修センターに設置されている教育用機材

教員研修の様子

教員研修センター内部外観

教員研修センター宿泊施設

M/M 署名（国民教育省にて）

略語一覧

GDTVE	General Directorate of Vocational and Technical Education	技術・職業教育総局
IAT	Industrial Automation Technology	自動制御技術
JCC	Joint Coordinating Committee	合同調整委員会
MoNE	Ministry of National Education	国民教育省
PDM	Project Design Matrix	プロジェクト・デザイン・マトリックス
PO	Plan of Operation	活動計画
TIKA	Turkish Cooperation and Coordination Agency	トルコ協力調整庁
TTC	Teachers Training Center	教員研修センター
SPREAD	The Project on Strengthening the Program of Expanding Industrial Automation Technologies Department	自動制御技術教育普及計画強化プロジェクト

プロジェクト位置図

＜トルコ全土地図＞

プロジェクトサイト

目　　次

添付資料

１．要請書

２．協議議事録（R/D、2011 年 11 月 28 日署名・交換）

３．PMD（Ver.0）和文仮訳

４．ローカルコンサルタント基礎情報収集調査結果報告資料

５．先方政府との協議資料

第１章　調査の概要及び要請内容

1-1　調査団派遣の経緯と目的

トルコ共和国（以下、「トルコ」と記す）では、1990 年以降の製造業の急速な拡大に伴い、製造業技術者、特に中堅技術者の質的、量的ニーズを満たすことが急務とされ、これら人材育成がトルコ政府の開発計画の重点課題に挙げられてきた。こうした政策を受け、トルコは教育システムの向上にかかる取り組みを進めてきていたが、更なる人材育成強化の必要性が指摘されていた。

こうしたなか、トルコ国民教育省（Ministry of National Education: MoNE)は、制御技術を備えた人材育成のため、わが国の支援により 2001 年から 2006 年まで技術協力プロジェクト「自動制御技術教育改善計画」を実施し、アナトリア職業高校イズミール校およびコンヤ校に自動制御技術（Industrial Automation Technology: IAT）学科を設立した。さらに同省では、トルコ国内各地のアナトリア職業高校 20 校にも IAT 学科を新設するとともに、イズミール校の付属施設として教員研修センター（Teacher Training Center: TTC）を設立し、国内における IAT 技術教育の普及に取り組んできた。

上述のプロジェクトが終了を迎えるころ、トルコでは第 9 次開発計画（2007 年～2013 年）が策定され、同計画においても「人的資源の開発」が主要目標のひとつに掲げられ、引き続き当該分野への取り組みが重視されることとなった。このような背景もあり、前身プロジェクトの成果を受け、2007 年から 2010 年まで技術協力プロジェクト「自動制御技術教育普及計画強化プロジェクト」が実施され、TTC における教員研修の実施体制整備が進められ、2010 年 9 月をもってプロジェクトは所期の目的を達成し完了した。

これまでのプロジェクトの成果を踏まえ、トルコ国民教育省は、成果をさらに周辺国にも展開することを計画し、周辺国教員を TTC に招聘し、各国の自動制御、電気・電子技術、情報通信技術（Information and Communication Technology: ICT）分野の技術・職業訓練の向上を図ることを目的とした技術協力プロジェクト「中央アジア・中東向け自動制御技術普及プロジェクト」（以下、「本プロジェクト」と記す）への協力要請が我が国になされた。なお、本プロジェクトを通じては、各国の技術・職業訓練の向上を図ることで、人材供給を通じた各国製造業の効率化促進、ひいては日系企業の投資促進にも結びつく事が期待されている。

本詳細計画策定調査の目的は、事前情報の収集及びトルコ現地での協議・現地調査を通じて、新規プロジェクト詳細内容についての協議を行うと共に、「JICA 事業評価ガイドライン」に則って、評価 5 項目の観点からプロジェクト計画を評価すること。また、協議の結果を元に PDM 案、PO 案、及び実施計画案（活動内容、専門家、資機材等）を含む R/D 案を作成し、M/M の署名・交換を行うことにある。

1-2　調査団の構成

氏名	担当業務	所属
高田　浩幸	団長・総括	JICA　トルコ事務所　次長
鴇田　正俊	教育制度	国立木更津工業高等学校　副校長
石坂　浩史	評価分析	アイ・シー・ネット株式会社
西井　洋介	協力企画	JICA　トルコ事務所　所員

1-3　調査期間、日程

2011 年 11 月 14 日（月）～2011 年 11 月 18 日（金)。詳細日程は以下のとおり。

団員（担当分野）				高田（団長・総括）	西井（協力企画）	鴇田（教育制度） 石坂（評価分析）	宿泊
日	日付	曜	時間	活動			
1	11/13	日	AM				
			14:40 23:05			成田発　（TK051） アンカラ着　（TK2186）	アンカラ
2	11/14	月	10:00	JICAトルコ事務所（団内）打ち合わせ			イズミール
			13:30	MoNE, TIKA キックオフミーティグ			
			17:00		空港へ移動		
			18:50		移動（アンカラ→イズミール）		
3	11/15	火	10:00 10:30		イズミール校(TTC)校長表敬訪問 イズミール校（TTC)との協議		アンカラ
			14:00 20:45		イズミール校(TTC)との協議 移動（イズミール→アンカラ）		
4	11/16	水	10:00	国民教育省、TIKAとのMM協議（プロジェクト概要（目的、活動、投入））			アンカラ
			13:30	国民教育省、TIKAとのMM協議（プロジェクト概要（実施体制）、責務分担）			
5	11/17	木	9:00	国民教育省、TIKAとのMM協議（他PDM、PO詳細）			アンカラ
			14:00	国民教育省、TIKAとのMM協議（RD文案、作業スケジュール、他留意事項）			
6	11/18	金	11:30	国民教育省とのMM署名			アンカラ
			PM	TIKA内MM署名調整、資料整理			
7	11/19	土	AM			資料整理	機内泊
			16:00			アンカラ発（TK2153）	
8	11/20	日	AM				
			13:10			成田着　（TK050）	

1-4　調査結果概要

（1）M/M 合意内容要約：

1）プロジェクト実施戦略

- 基本コンセプト ：
  - ✓ 先行技プロ“SPREAD”成果のもとにプロジェクトを実施する。
  - ✓ プロジェクトの主眼は、対象各国 IAT 関連分野における技術教育・職業訓練教員の能力強化。
  - ✓ プロジェクトの中心的な活動は対象各国向け第三国研修の実施。
  - ✓ プロジェクトの実施を通じ、トルコ側研修実施体制（MoNE、TTC、TIKA）の国際研修実施体制・能力の強化を図る。

- 研修対象国の選定：
  - ✓ 9 カ国（パキスタン、ウズベキスタン、カザフスタン、アゼルバイジャン、キルギス、トルクメニスタン、タジキスタン、アフガニスタン、パレスチナ）で決定。
  - ✓ 当初対象予定国のうち、シリアについては、政情不安定[1]のため、事業実施の目処が立たないことから、対象外。イランについても、ローカルコンサルタントによる基礎情報収集調査の際に、イラン関係機関からトルコとの連携に後ろ向き[2]である旨表明があったところ、対象外（以上は対象方針通り）。加えて、イラク[3]についても、国境地帯のテロ問題等国際関係上センシティブな問題が多々あるところ、あえて対象国には含めたく無い意向が MoNE より示され対象外とした。

- 研修対象国のグループ分けと研修実施戦略：
  - ✓ 研修対象各国の経済・産業概況、想定される技術教育・職業訓練教育制度の成熟度、想定される技術ニーズレベル等を下に、“Country Focused Target”（国別研修ターゲット、4 カ国）と “Group Target”（合同研修ターゲット、5 カ国）の 2 グループに分割。
  - ✓ それぞれのニーズに対応するべく以下のとおり別々の研修実施戦略を適用する事とした。なお、3 年間で具体的な成果を達成する事を想定し、プロジェクトとしてのプライオリティは“Country Focused Target”4 カ国に置くこととした。

Country Focused Target	Group Target
・個別ニーズに対応すべく国別研修の形態 ・各国毎に 3 年間の研修を通じて達成すべき目標と、ロードマップを決定。 ・目標に照らし、対象機関、対象者を予め	・各国ニーズは押並べて基礎レベルと想定されるため、合同研修の形態で基礎導入研修を実施。 ・毎年、各国研修員を公募。

[1] 従来の政情混乱に加え、11 月 13 日にはアラブ連盟によるシリアの参加資格停止に抗議し、体制派デモ隊によるカタール、トルコ及びサウジアラビア大使館の襲撃事件発生。TIKA シリア事務所職員も一時退避帰国中。

[2]イランはトルコとして被援助対象国として認識されておらず、TIKA の事業対象国としても含まれていない。

3イラク政府との協定文書の締結に支障から、TIKA も同国への事務所設立を行えておらず、事業についても否定はしないが、積極的な展開の意向は無い。

選定。 ・対象者は原則毎年同じとし、各国毎目標とロードマップに従い、毎年の研修達成目標と、宿題を設定する。	・多様なレベル、言語、文化に対応するため、各国招聘人数は少人数。

2）プロジェクトの基本計画：

- PDM 案：
  - ✓ PDM 案（ver.0）（添付資料 2　R/D 文中 Attachment1-1）のとおり合意済。プロ目、上位目標の指標については対象国毎に設定。他指標、PO も含めプロジェクト計画詳細は開始後 6 ヶ月以内に確定、JCC にて承認予定。

- プロジェクト実施体制：
  - ✓ 実施体制、各機関の役割分担について合意済。　TIKA も含めた関係機関の詳細役割分担、投入分担についても整理済。

（3）プロジェクト実施妥当性の評価：

プロジェクトは、①IAT に関する技術教育・職業訓練ニーズが比較的高いと思われる 4 カ国については国別に目標を設定して研修を実施し、それ以外の 5 カ国については IAT の要素技術について基礎的な研修を実施する予定であり、対象国のニーズに適切に応えうる計画である、②MoNE、TTC、TIKA の国際協力の方針と合致した計画である、③日本の対トルコ援助方針（南南協力への支援）や対象国援助方針（人材育成など）と整合性があるーことなどから、妥当性は高いと考えられる。

成果からプロジェクト目標につながる論理構造は適切であり、有効性も見込める。投入計画は適切であり、IAT カリキュラムや教材をはじめとした日本とトルコのこれまでの協力成果を活用できることから、効率的な実施も見込める。プロジェクトのインパクトとして、対象国の IAT に関する技術教育・職業訓練能力の向上を期待できる。トルコの対アゼルバイジャン協力の実績から、日本企業を含むトルコ進出企業と対象国との関係構築も期待できる。持続性については、対象国が多く、一律に判断することはできないが、プロジェクト計画は国ごとに目標を設定してフォローアップも行うなど、持続性を高めるデザインとなっている。

結論として、プロジェクトを実施することは適当であると考えられる。

1-5　団長所感

調査期間中を通じて感じられたことは、トルコ側の本プロジェクト実施に向けたコミットメントの強さである。イズミールにある TTC を訪問した際には、校長自らが調査団にほぼ全ての日程において対応し、さらに当初予定されていなかったアンカラでの協議にも日帰りで参加した。加えて本プロジェクト実施の上で重要な役割を果たす TIKA からも、2 名の担当者

がアンカラでの協議に全て参加した。こうした協議への参加のみならず、TTC の教員からは自らが周辺国への技術研修を行うという気概が強く示されており、またTTCの研修資機材も、JICA の協力による SPREAD プロジェクトが終了して 1 年あまりの間に、トルコ側の予算によって改善更新されていることが確認された。

協議期間中、最も時間を割いたことは、プロジェクトの主たる活動である第三国研修を実施するにあたっての国民教育省、TIKA、JICA の間での予算の分担と概算額の確認であった。実際の予算は研修コース毎に再度計算が必要であるものの、トルコ側が本プロジェクト実施にあたって予め各組織の予算に組み込むために行った一連の協議は、プロジェクト開始後の研修のコースの実施をトルコ側の予算面から担保することになると考える。

最後に、プロジェクトを立案する JICA と国民教育省との一連の協議への TIKA 若手職員の参加は、TIKA の能力向上に多少なりとも調査団として貢献したと考えるものであり、本プロジェクト開始後も、同様なエクササイズがプロジェクト専門家、TTC 関係者、国民教育省関係者、TIKA 職員との間で行われることを期待したい。

第 2 章　トルコ研修実施体制

2-1　国民教育省、教員研修センター概要

初等教育から高等教育までの教育行政は国民教育省（MoNE）により行われている。その中で、中等教育は普通教育と職業教育に大別され、工業分野の職業教育は MoNE の技術職業教育総局（GDTVE）が担当している。職業教育総局の管轄下にアナトリア工業高校（ATL)、アナトリア職業高校（AML)、工業高校（TL)、職業高校（EML）が設置されている。

中等職業教育に携わる教員に対する研修は、MoNE の教育研修部（Department In-service Training）が担当しており、全国の職業高校内に設置された演習室と寮施設をそなえた教育研修センター（TTC）を利用して行われている。現在、自動制御技術（IAT）分野の研修はイズミールのアナトリア職業高校の教育研修センターで実施されている。

2-2　教員研修センターの運営・研修実施体制と課題

イズミールのアナトリア職業高校の教育研修センター（TTC）には、現在 7 つの演習室、30 室（60 人分）の宿泊施設および食堂が設置されている。イズミール校の IAT 分野の教員は全部で 17 名おり、そのうち 7 人が TTC での研修講師を兼務している。

2011 年の教員研修は、53 コースを開催し、延べ 748 人が受講している。1 コースは 5 日間および 12 日間の 2 種類の開催日程で、10 人から 20 人前後の参加人数となっている。

また、研修内容は機械、電気電子、コンピュータ、制御分野のそれぞれに基本レベルと上級レベルが用意されており、研修者のアンケート結果において研修内容は高く評価されている。

年間の研修計画は、TTC 側で案を作成し、MoNE の教育研修部が予算等の調整および研修者の公募を行っている。研修者の旅費、宿泊費は教育研修部から支給される。

以上、現在の研修実施体制は充分な状態にあるが、更に質の向上を目指し、今後改善を図るべき点を以下に挙げる。

- TTC はアナトリア職業高校イズミール校付属施設として位置づけられているため、光熱費や研修機材の更新等の運営費用は、イズミール校の年間予算の中から工面している状況にある。機材更新等は少しずつではあるが実施されているものの充分とはいえない。
- TTC の研修に携わっている教員は現時点では能力、気概とも充分であるが、技術の進歩に伴ったレベルアップ体勢は充分とはいえない。企業との情報交換、スペインの研修プロジェクトへの参加等を通じ、継続的な技術レベルのブラッシュアップの努力が必要。

2-3　研修運営、カリキュラム構築時における留意事項

(1)　研修内容について

国外向けとしてアゼルバイジャンの研修を実施しているが、研修対象者の選択方法の確立をは

じめ、対象国ニーズに応じた研修カリキュラムを充分検討されておらず課題を残している。また、対象国の教育体制によっては、演習室の構築や教材開発方法さらには教授方法等も研修に取り入れることを検討する必要がある。

(2) 研修機材について

TTC で使用している研修機材は、前回のプロジェクト普及校および現地企業の使用機材を調査し導入を検討したもので、おもにヨーロッパ製と日本製のものが導入されている。TTC での研修内容が PLC、CNC など企業で実際に使用している機材のオペレーションを含んだ形のものが多いためである。従って、対象国の機材普及状況を調査し、それに応じた研修プログラムを作成する必要がある。

(3) TTC 教員の待遇改善

職業高校の教員の給与は授業の持ち時間で決定されるようで、新しいカリキュラム構築やテキスト、教材開発等への報酬がまったくない状況にある。現在の TTC の研修に携わっている教員は気概が高く、教材開発も積極的に行っているが、イズミール校の他の教員と待遇に差はなく、むしろ教材開発等余分な仕事をしている状況にある。TTC で働く教員の待遇改善および TTC の運営費を含め TTC の長期的役割について国民教育省と検討を進める必要がある。

第 3 章　プロジェクト実施戦略

3-1　プロジェクト基本方針

本プロジェクトの一義的な目的は、トルコ国内で実施する周辺対象国向けの研修を通じ、各国 IAT 関連分野の技術教育・職業訓練教員の能力強化を図る事にあるが、ひいては、これらプロジェクト活動を通じ、トルコ側関係機関（MoNE、TTC、TIKA）の外国向け研修実施能力の向上を図る事も期待されている。

研修実施能力に関しては、TTC に蓄積された自動制御分野技術教育・職業訓練教員研修のノウハウを最大限活用する事が前提となるが、2007 年から 2010 年にかけて実施された「自動制御技術教育普及計画強化プロジェクト」を通じ、TTC ではすで国内教員向けの研修システムの確立がほぼ達成済と評価されており、事実現在も累次の国内教員向け、民間企業技術者向け研修を実践、高い評価を受けている。換言すれば、本プロジェクトを通じた能力向上支援の主眼は、TTC 他トルコ関係機関による教員研修内容そのものへの更なる技術支援ではなく、これらノウハウを活用したうえで、国内ではなく周辺国向けの研修にかかる計画立案を含む研修実施・管理能力向上、より具体的には多様な対象国のニーズを丁寧に把握し、ニーズに合った研修内容を既存のリソースの範囲で柔軟に構築して適切に実施、フォロー支援する能力の向上を図る事にある。

なお、将来的なインパクトとしては、本プロジェクトの実施を通じ、各国内での技術教育・職業訓練分野への裨益、更には各国製造業の拡大、日系企業の進出に結びつく事も期待されている。帰国後研修員のモニタリング、フォロー体制の構築により、右促進する体制の構築も期待されている。

本調査の過程においては、本プロジェクトの基本方針として以下の点をトルコ側と合意した。

- 先行技プロ“SPREAD”成果のもとにプロジェクトを実施する。
- プロジェクトの主眼は、対象各国 IAT 関連分野における技術教育・職業訓練教員の能力強化。
- プロジェクトの中心的な活動は対象各国向け第三国研修の実施。
- プロジェクトの実施を通じ、トルコ側研修実施体制（MoNE、TTC、TIKA）の国際研修実施体制・能力の強化を図る。

3-2　対象候補国での技術・職業訓練分野の概況比較分析

対象国には、天然資源に恵まれ比較的所得水準が高い国、農業を中心とした所得水準の低い国、紛争の影響により産業全般の発達が遅れている国が含まれる。いずれの国でも技術教育・職業訓練に関するニーズはあるが、その分野とレベルは異なる。

当機構は、2011 年 9 月から 10 月末にかけて、トルコローカルコンサルタントによる基礎情報収集調査（Study Survey for the Industrial Automation Technology (IAT) Extension Project for Central Asian / Middle East Countries。　Aquadem Consulting 社と Ankon Consulting 社

によるジョイントベンチャーによる受託。）を実施し、各対象国の現状分析を行った。（各国分析のとりまとめ結果については添付資料 4 を参照）

産業がある程度発達しているパキスタンでは、モデル拠点校の拡充を通じて産業界との連携を強化することを目指しているが、現状では企業や受益者のニーズに沿った訓練がなされておらず、産業界の十分な信頼を得るに至っていない。ウズベキスタンは、航空宇宙産業や自動車産業を筆頭に高度な産業を有し、IAT 分野の人材ニーズは高いが、教育現場では新しい技術や情報、熟練した教員、質の高い教材が不足している。ソ連崩壊後のロシア人技術者の流出や若年層の雇用対策のため、中高等教育機関の拡大と教員の養成・再教育が必要とされている。カザフスタンでは、製造業の発達と工場の近代化にともない、IAT を習得した人材が必要となっていて、大規模な職業訓練センターの設立が計画されている。アゼルバイジャンは、IAT 分野の人材ニーズに応えるために、2008 年から教員育成の協力をトルコに仰いでいる。これらの国々では IAT を必要とする産業が育っているが、IAT に関する教育・職業訓練は満足に行われていない。一方、アフガニスタン、キルギス、パレスチナ、タジキスタン、トルクメニスタン等の国については、産業の高度化には時間を要する状況である。しかし、IAT の要素技術である電気、電子、情報通信に関する技術教育・職業訓練についてはニーズがある。

3-3　対象国の選定とグルーピング

非常に乱暴な整理ではあるが、上記 3-2 記載のローカルコンサルタントによる調査結果に基づき、関係者との協議の上、各国の経済規模・産業レベル、職業訓練・技術教育レベル（制度の充実度、ニーズ対応の程度)、使用している技術レベルを元に、各国現状の比較推定を大まかにまとめた。(() はローカルコンサルタントによる現地調査が実施できなかったため、JICA 事務所担当者に対するヒアリングを基にした推定)。

	ﾊﾟｷｽﾀﾝ	ｲﾗﾝ	ｳｽﾞﾍﾞｷｽﾀﾝ	ｶｻﾞﾌｽﾀﾝ	ｱｾﾞﾙﾊﾞｲｼﾞｬﾝ	ｷﾙｷﾞｽ	ﾄﾙｸﾒﾆｽﾀﾝ	ﾀｼﾞｷｽﾀﾝ	ｼﾘｱ	ｱﾌｶﾞﾆｽﾀﾝ	ﾊﾟﾚｽﾁﾅ	ｲﾗｸ
産業ﾚﾍﾞﾙ	◎	◎	◎	○	○	×	△	×	(△)	(×)	(×)	(○)
TVET 制度成熟度	◎	◎	○	○	○	△	×	×	(△)	(×)	(×)	(×)
技術ﾚﾍﾞﾙ	◎	○	○	○	△	△	△	×	(△)	(×)	(×)	(×)
総合評価	**◎**	**◎**	**◎**	**○**	**○**	**△**	**△**	**×**	**△**	**×**	**×**	**×**
参加意欲	◎	×	○	◎	◎	◎	○	○	(○)	(×)	(×)	(×)

上記総合評価により判断し、以下の様な整理（推定）ができると考えられる。なお、言語の違いについては、通訳の配置によりカバーが可能と思われたところ、上述分析結果を優先し選別を行った。

上級ﾚﾍﾞﾙ		パキスタン、ウズベキスタン、[イラン]
中級ﾚﾍﾞﾙ	上位ｸﾞﾙｰﾌﾟ	アゼルバイジャン、カザフスタン、
	下位ｸﾞﾙｰﾌﾟ	キルギス、トルクメニスタン、[シリア]
基本ﾚﾍﾞﾙ		タジキスタン、アフガニスタン、パレスチナ、[イラク]

なお、イランについては、ローカルコンサルタント調査団による訪問の際、先方政府関係者よりトルコとの連携に後ろ向きの意向が示された事に加え、トルコ国民教育省、TIKA も比較的協力に否定的（TIKA はイランを援助対象国とみなしていない）であることから、対象外とすることとなった。また、シリアについては現在政情が不安定なため、トルコ国民教育省、TIKA 共に懸念を表明しているところ、政情安定化を待って、プロジェクト開始 2 年目以降、追って対象国への追加を検討することと整理された。加えて、イラクについても、国境地帯のテロ問題等国際関係上センシティブな問題が多々あるところ、あえて対象国には含めたく無い意向が MoNE より示され対象外とした。

3-4　研修運営戦略

上記 3－2、3－3 の分析を踏まえ、本プロジェクトでは、レベルの違う国々を 2 つに分け、それぞれに別の研修運営戦略（国別研修と合同研修）を適用する事で、多様なニーズに可能な限り適切かつ効率的に対処できる体制を築くこととした。研修運営戦略別のグループ化は以下のとおり。

グループ名	対象国名
Country Focused Target （国別研修ターゲット国）	アゼルバイジャン、カザフスタン、パキスタン、ウズベキスタン（計 4 ヶ国）
Group Target （合同研修ターゲット国）	アフガニスタン、キルギス、パレスチナ、タジキスタン、トルクメニスタン（計 5 ヵ国）

国別研修ターゲット国は、一定水準以上の経済・産業発展を果たしており、技術教育・職業訓練教育制度も体制として整備されており、自動制御技術そのものではなくとも、関連分野にかかる一定水準以上の技術ニーズが存在すると想定される。一方、合同研修ターゲット国は、国別研修ターゲット国に比較し、経済・産業発展が途上にあり、技術教育・職業訓練教育制度自体は存在するものの、期待される技術としては、電気・電子製品等の整備技術等、基礎的な段階にあると想定される。それぞれの研修実施戦略の概要をまとめると以下のとおり。

グループ名	研修実施戦略
Country Focused	➢ 各国個別ニーズに十分対応するべく、国別研修（１ヵ国のみを対象と

Target（国別研修ターゲット国）	した研修）の形態をとる。 ➢ 各国毎に 3 年間の研修を通じて達成すべき目標と、それに至るロードマップを予め決定する。 ➢ 目標に照らし、適切な研修対象機関、対象者を予め選定する。 ➢ 研修対象者は原則毎年同じとし、各国毎目標とロードマップに従い、毎年の研修達成目標を設定。研修後には翌年度に向けての宿題を課す。
Group Target（合同研修ターゲット国）	➢ 各国現状の差はあるものの、研修ニーズは総じて自動制御分野にかかる基礎レベルの技術習得と想定されるため、合同研修（複数国を対象とした研修）の形態をとり、基礎導入研修を実施。 ➢ 毎年、各国研修員を公募する。 ➢ 多様なレベル、言語、文化に対応するため、各年度の各国招聘人数は少人数を想定。

なお、上記 3－1 プロジェクトの基本方針に記載のとおり、トルコ側関係機関の外国向け研修実施能力向上に資する事が期待され、3 年間を通じより明確な成果達成が見込まれるという観点から、本プロジェクトにおいては “Country Focused Target”（国別研修ターゲット国）に重点を置いたプロジェクト運営を想定する事とした。右に伴い、各コース毎の実施計画（コース数、人数等）についても以下のとおりとすることで関係機関と合意に至った。

グループ名	年間コース数	年間参加者数	研修期間
Country Focused Target（国別研修ターゲット国）	4 コース （1 ｺｰｽ×4 か国）	40 人 （10 人×4 ヶ国）	3 週間
Group Target（合同研修ターゲット国）	2 コース	20 人 （2 人×5 ヵ国×2 ｺｰｽ）	4 週間

第 4 章　プロジェクトの基本計画

4-1 プロジェクトの目標と活動

(1) プロジェクト名

プロジェクト名は、和文は「中央アジア・中東向け自動制御技術普及プロジェクト」、英文は「The Industrial Automation Technology (IAT) Extension Project for Central Asian / Middle East Countries」である。

(2) 協力相手先機関

プロジェクト実施機関は国民教育省 (MoNE)、協力機関はトルコ協力調整庁 (TIKA) である。

(3) 対象地域

プロジェクトの主な活動は TTC 所在地であるイズミール市を拠点として実施する。ただしプロジェクト活動として実施する研修では、中央アジア、中東地域全域を対象としている。

(4) 協力期間

プロジェクト実施期間は 2012 年から 2015 年までの 3 年間である。トルコへの専門家派遣日をプロジェクト開始日とする。

(5) 対象国

①国別研修の対象として、アゼルバイジャン、カザフスタン、パキスタン、ウズベキスタンの 4 カ国、②合同研修の対象として、アフガニスタン、キルギス、パレスチナ、タジキスタン、トルクメニスタンの 5 カ国ーを対象国とする。

(6) ターゲットグループ

ターゲットグループは、自動制御技術 (IAT) と関連科目を教える対象国技術・職業学校教員とし、年間 60 人程度をトルコに研修員として招く。

(7) 上位目標

プロジェクトの上位目標は「対象国の IAT に関する技術教育・職業訓練能力が向上する」である。指標については、プロジェクト開始 6 カ月以内に、対象国ごとに設定する。ほかに、IAT 教育に関する日本とトルコの中長期的な国際協力の方向性を明確にするために、スーパーゴールとして「対象国で IAT に関する人材が育成される」を設定した。

(8) プロジェクト目標

プロジェクト目標は「対象国教員の IAT に関する技術教育・職業訓練能力が向上する」である。

【指標】

プロジェクト開始 6 カ月以内に、対象国ごとに指標を設定する（以下は例）。

A 国

A-1 少なくとも XX 人の教員が基礎的な IAT に関する科目を教えられるようになる。

A-2 基礎レベル IAT コース教科書が作成される。

B 国

B-1 少なくとも XX 人の教員が IAT に関する教科書を改訂できるようになる。

B-2 IAT 教育のカリキュラムが改善される。

(9) 成果と活動

成果、活動、成果指標は次のとおり。

1) 成果 1

ターゲットグループの研修が適切に計画される。

【活動】

1-1 各国の詳細研修ニーズを特定する。

1-2 各国のプロジェクト対象機関を選定する。

1-3 各国について、プロジェクトの具体的な目標を設定する。

1-4 研修カリキュラムを作成・改善する。

1-5 研修教材を準備・改善する。

1-6 研修スケジュールを作成する。

【指標】

1.1 各国別研修対象国について、適切な研修目標が設定される。

1.2 合同研修について、適切な研修目標が設定される。

1.3 4 つの国別研修対象国と合同研修について、適切な研修計画が作成される。

2) 成果 2

ターゲットグループに研修が効果的に提供される。

【活動】

2-1 研修員を選定する。

2-2 受け入れ・運営準備を行う。

2-3 研修を実施する。

2-4 研修を評価する。

【指標】

2.1 国別研修の研修員の少なくとも XX%が研修内容を十分理解する。

2.2 合同研修の研修員の少なくとも XX%が研修内容を十分理解する。

3）成果 3

フォローアップシステムが構築される。

【活動】

3-1 フォローアップ計画を作成する。

3-2 ウェッブベースの情報共有システムを開発する。

3-3 フォローアップを行う。

3-4 研修インパクトを評価する。

【指標】

3.1 ウェッブベースの情報共有システムが適切に管理される。

3.2 国別研修の 2 年目と 3 年目に、研修インパクトが適切に評価される。

3.3 研修インパクト評価が適切に実行される。

4-2 投入計画

日本側、トルコ側の投入は以下のとおり。

(1) 日本側（総額 1.5 億円）

1）専門家

- チーフアドバイザー／研修管理
- 業務調整／カリキュラム作成
- その他の分野

2）研修経費

- 航空券、空港送迎、宿泊、日当、旅行保険など

3）アゼルバイジャン、カザフスタン、パキスタン、ウズベキスタンへの合同ニーズ調査の日本側参加者費用

(2) トルコ

1）人員配置

- プロジェクトダイレクター（MoNE 技術・職業教育総局長）
- 副プロジェクトダイレクター（MoNE 技術・職業教育総局部長）
- プロジェクトマネージャー（アナトリア職業高校イズミール校校長）
- TTC 教員
- TIKA フォーカルポイント

2）施設

- TTC での専門家執務スペース
- TTC の研修施設

3）プロジェクトに必要なデータと情報

4）経常経費

- トルコ側が保有する資機材、器具、車両、工具、予備部品などの供給・取り替え費用
- 光熱・水道費などプロジェクト運営に必要な基礎的経費

5）研修経費

- 通訳、翻訳、会議、研修教材、印刷、小旅行など

6）アゼルバイジャン、カザフスタン、パキスタン、ウズベキスタンへの合同ニーズ調査のトルコ側参加者費用

4-3 実施体制

国民教育省（Ministry of National Education: MoNE)技術・職業教育総局（General Directorate of Vocational and Technical Education)がカウンターパート機関となるが、実務上は、教員研修センター（TTC）が併設されているアナトリア職業高校イズミール校（Izmir Mazha Zorlu Anatolian Techinical and Industrial Vocational High School）と協力して業務を進める。なお、トルコ協力調整庁（Turkish Cooperation and Coordination Agency：TIKA）を協力機関として適宜連携を行う。プロジェクトの実施体制を図 1に示した。

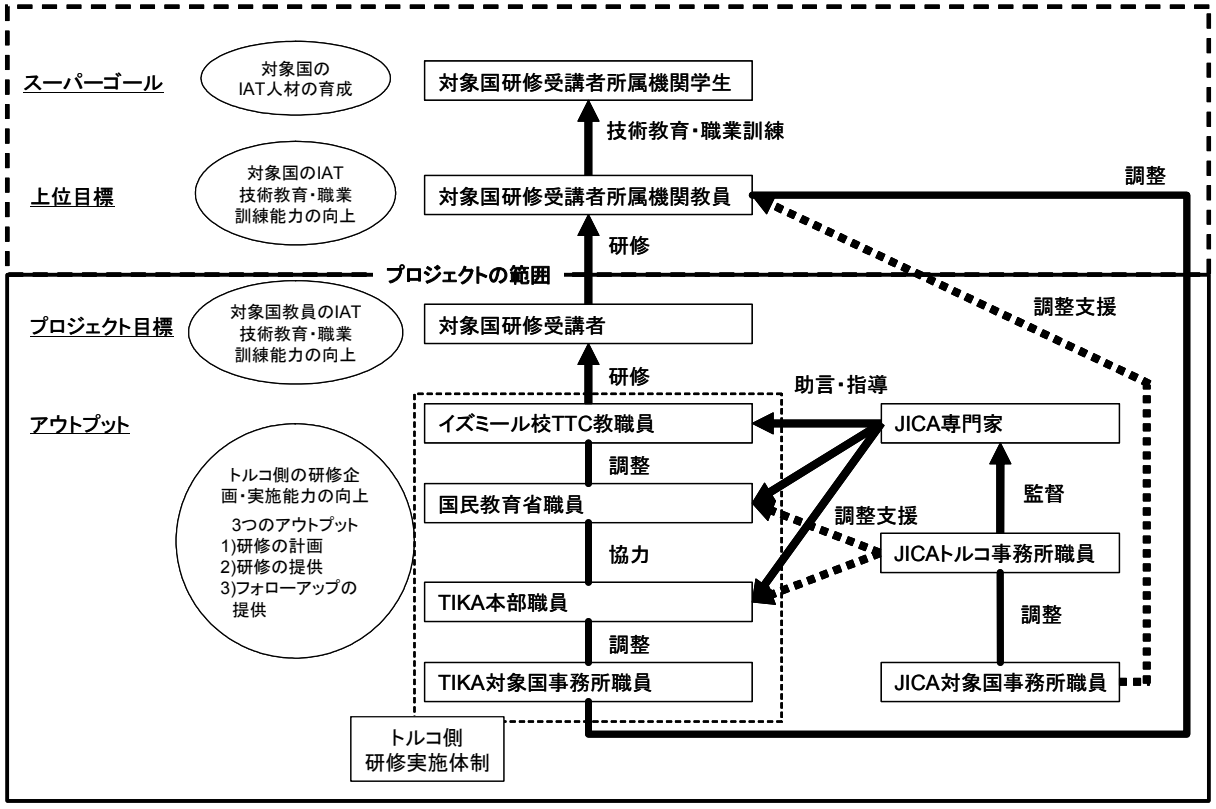

図 1　プロジェクト実施体制

（1）MoNE

MoNE はプロジェクト全体について最終的な責任を負う。MoNE は対象国にあるトルコ在外公館を含む関係者と必要に応じて調整する。TTC、TIKA とともに対象国の研修ニーズを把握し、TTC が

JICA 専門家の助言を得て行う研修員の選定を監督する。

(2) TTC

TTC はプロジェクトの活動主体である。TTC は研修カリキュラムや教材の作成などの準備を行い、宿泊施設に研修員を受け入れ、研修を実施する。MoNE、TIKA とともに対象国のニーズを分析して各国の研修目標を設定し、研修員を選定する。研修とそのインパクトを評価し、フォローアップを行う。

(3) TIKA

TIKA 本部は対象国 TIKA 事務所と調整して、各国の現状と研修ニーズの把握、研修員の募集、選定、受け入れ準備などを行う。対象国 TIKA 事務所は関係機関と調整して、研修員募集・選定に必要な情報伝達などを行うとともに、帰国研修員に対するフォローアップを調整する。

(4) JICA

JICA は専門家を派遣し、監督する。JICA トルコ事務所は MoNE、TTC、TIKA 本部に加え、対象国の JICA 事務所と必要な調整を行う。対象国の JICA 事務所は、必要に応じて研修員募集などを支援する。専門家は MoNE、TTC、TIKA に対して、プロジェクト実施に必要な技術的指導、助言、提言を行う。専門家は研修員の選定に参加し、必要に応じて講義を実施するなどして、TTC 教員による研修実施を支援する。

(5) 合同調整委員会

JICA、MoNE、TIKA の関係者などで構成する合同調整委員会（JCC）を設置する。JCC の機能は、①関係組織間の調整、②年間活動計画の承認、③進捗管理、④モニタリング・評価、⑤問題・課題への対応協議ーである。JCC は少なくとも年 1 回開催する。

4-4 プロジェクト実施にあたっての留意点

プロジェクト実施にあたっての留意点は以下のとおりである。

(1) 前提条件

- 対象国がプロジェクトに参加する。

(2) 外部要因

1) プロジェクト目標達成のための外部条件

- 帰国研修員が研修成果を本国で活用・共有する。

2) 上位目標達成のための外部条件

- 対象国が IAT に関係する教員と機関の能力を向上するために研修成果を活用する。

(3) その他

1）TIKA の能力強化

従来 TTC が独自に実施してきたトルコ国内向け研修と違い、今般プロジェクトで対象とする外国向け研修においては、研修実施主体である MoNE、TTC に加え、現地とのパイプ役を担う TIKA の役割が重要となる。

我が国の対トルコ支援戦略においても、高中進国となり地域での影響力も高まりつつあるトルコのドナー化支援、更には南南協力等を通じた我が国との連携が重要課題となっている。TIKA はトルコ ODA の実務機関であり、上記トルコ支援戦略の一環としても、同機関のキャパシティの向上は重要課題となっている。

一方、TIKA はその経験値の少なさからも、事業運営・管理手法、現地事務所と本部の連携、戦略性の向上等において課題を抱える。事実、TTC は TIKA と連携し 2008 年、2009 年、2011 年の 3 回、アゼルバイジャン向け国際研修を実施した経験があるが、対象国ニーズの分析とそれに応じた研修内容の構築、研修対象者の選定、ロジ調整、帰国研修員のフォロー等の面で改善の余地が残る事に加え、TIKA からの関与がロジ手配や経費支援に終始しがちで内容面への貢献が不足しているとの課題も残った。

上記観点から、本プロジェクト事業においては、対象国各国とのパイプ役を JICA の事務所ネットワークに頼るのではなく、TIKA の事務所ネットワークに委ねる事で主体的な関与を導き出し、同機関の事業実施能力向上を図る。

2）PDM の指標

プロジェクト・デザイン・マトリックス（PDM）の指標をプロジェクト開始 6 カ月以内に確定する必要がある。現在、XX となっている記述を具体的な数字で置き換えるとともに、プロジェクト目標と上位目標について、対象国ごとに各国の事情をふまえて指標を設定する。

3）PO の作成

プロジェクト開始後、速やかに活動計画（PO）を作成する必要がある。詳細計画策定調査では研修のグループ分け、回数、日数など、活動の大枠に合意して暫定版 PO を作成した。プロジェクト実施にあたっては、トルコと対象国の祝祭日、TTC と研修対象者の業務スケジュール、研修準備にかかる期間などを考慮して、適切な PO を作成する。

4）多言語への対応

効果的な研修を提供するには、トルコ語に加えて、少なくとも英語、ロシア語、アラビア語、ダリー語に対応できる必要がある。TTC にはトルコ語と英語の教材はあり、すでに両言語で研修を実施する能力がある。研修実施にあたっては、教材を適切な言語に翻訳するとともに、通訳を配置する。可能な限り同言語の参加者でグループを編成することや、適当な通訳機材を使用することなどにより、研修参加者の集中力と理解度を向上させる工夫も求められる。

5）予算確保

詳細計画策定調査では JICA、MoNE、TIKA の負担すべき予算項目について合意した（主に JICA は渡航費を MoNE 及び TIKA が研修実施経費を負担する事で合意。添付資料 2　R/D 文中、Attachment 2-2 参照)。研修経費については予算額も試算した。今後、各機関が必要な予算を確保できるよう相互に連絡･調整を続ける必要がある。各研修コースの詳細な予算積算については、プロジェクト開始後、速やかに実施すべきである。

4 - 5 モニタリングと評価

MoNE と JICA 専門家は、共同で四半期ごとにプロジェクト進捗報告書を作成する。JCC はプロジェクトの進捗をモニタリングする。プロジェクト終了までの 6 カ月の間に、JICA、MoNE、TIKA は共同で終了時評価を実施する。必要に応じて、運営指導調査と事後調査を実施する。

第5章　プロジェクトの実施妥当性

5-1　総括

プロジェクトは、①対象国のニーズに適切に応えうる計画である、②トルコの国際協力の方針と合致した計画である、③日本の対象国援助方針や対トルコ援助方針と整合性があるーことなどから、妥当性は高いと考えられる。

成果からプロジェクト目標につながる論理構造は適切であり、有効性も見込める。投入計画は適切であり、IAT カリキュラムや教材をはじめとした日本とトルコのこれまでの協力成果を活用できることから、効率的な実施も見込める。プロジェクトのインパクトとして、TIKA の国際協力に関する実務能力の向上､MoNE と TTC の IAT 分野での技術協力に関する能力の向上を期待できる。上位目標の達成と持続性については、対象国が多く、一律に判断することはできないが、プロジェクト計画は国ごとに目標を設定してフォローアップを行うなど、目標達成の可能性と持続性を高めるデザインとなっている。

トルコは日本のこれまでの協力を高く評価し、感謝している。今回のプロジェクトはトルコが日本から学んだことを周辺国への国際協力に活かしたいという希望をかなえるものでもあり、そうした観点からも意義があるプロジェクトである。結論として、プロジェクトを実施することは適当であると考えられる。

5-2　妥当性

以下に示す理由からプロジェクトの妥当性は高いと考えられる。

(1) 対象国・社会のニーズ

対象国には､天然資源に恵まれ比較的所得水準が高い国､農業を中心とした所得水準の低い国､紛争の影響により産業全般の発達が遅れている国が含まれる。いずれの国でも技術教育・職業訓練に関するニーズはあるが、その分野とレベルは異なる。

産業がある程度発達しているパキスタンでは、モデル拠点校の拡充を通じて産業界との連携を強化することを目指しているが､現状では企業や受益者のニーズに沿った訓練がなされておらず､産業界の十分な信頼を得るに至っていない。ウズベキスタンは、航空宇宙産業や自動車産業を筆頭に高度な産業を有し、IAT 分野の人材ニーズは高いが、教育現場では新しい技術や情報、熟練した教員、質の高い教材が不足している。ソ連崩壊後のロシア人技術者の流出や若年層の雇用対策のため､中高等教育機関の拡大と教員の養成･再教育が必要とされている｡カザフスタンでは、製造業の発達と工場の近代化にともない、IAT を習得した人材が必要となっていて、大規模な職業訓練センターの設立が計画されている。アゼルバイジャンは、IAT 分野の人材ニーズに応えるために、2008 年から教員育成の協力をトルコに仰いでいる。これら国別研修の対象国である 4 カ国では、IAT を必要とする産業が育っているが、IAT に関する教育・職業訓練は満足に行われてい

ない。

合同研修の対象国であるアフガニスタン、キルギス、パレスチナ、タジキスタン、トルクメニスタンについては、産業の高度化には時間を要する状況である。しかし、IAT の要素技術である電気、電子、情報通信に関する技術教育・職業訓練についてはニーズがある。

こうしたなか、プロジェクトは IAT に関する技術教育・職業訓練ニーズが比較的高いと思われる 4 カ国については、国別に目標を設定して研修を実施し、それ以外の 5 カ国については、IAT の要素技術について基礎的な研修を実施する予定であり、対象国のニーズに適切に応えうる計画となっている。

(2) 開発計画との整合性

プロジェクトは対象国の開発政策と整合している。国別研修対象国のパキスタンは、貧困削減戦略文書Ⅱにて、産業の国際競争力や人的資本を強化する方針を示している。ウズベキスタンは、2007 年に策定した福祉向上戦略（Welfare Improvement Strategy）で、輸出の原材料から付加価値の高い商品への段階的移行、知識指向型経済実現に必要な人材育成への投資をうたっている。カザフスタンは、産業・技術革新発展戦略（2003～2015 年）にて、製造業の育成を通した経済の多角化により資源偏重からの脱却を目指すとしている。アゼルバイジャンは、貧困削減・持続的発展計画（2008～2015 年）に定めた 9 つの主要戦略のなかに、非石油セクターのバランスのとれた発展と教育の質の改善を含んでいる。

合同研修対象国については、アフガニスタンは、国家開発戦略で経済と社会の発展を 3 本柱の 1 つとし、キャパシティ・ビルディングを 6 つの分野横断的課題の 1 つに設定している。キルギスは、国家開発戦略（2009～2011 年）で通信・情報、イノベーション技術振興、教育を優先項目に定めている。パレスチナは、社会開発や経済開発を開発課題としている。タジキスタンは、貧困削減戦略（2010～2012 年）にて、市場経済原理に基づき、中期的な視野で国民の経済的、社会的な繁栄を実現するとしている。

今回は周辺国を支援する立場のトルコは、教育分野への支援を重視していて、学校建設、奨学金付与などを行っている。最近は、アゼルバイジャンの IAT 分野の教員育成にも協力している。TTC の長期戦略には、TTC をトルコと周辺国に対する IAT 分野の技術教育・職業訓練に関する人材育成センターとして機能させることが明記されている。トルコは大方針として、開発援助の質の向上も掲げている。プロジェクトは、こうしたトルコの国際協力の取り組みと合致している。

(3) 日本の援助政策との整合性

プロジェクトは日本の対象国援助方針に合致している。国別研修対象 4 カ国のうちパキスタンについては、「人間の安全保障の確保と人間開発」を援助重点分野に設定して、技術教育・職業訓練機関の強化を支援する方針である。ウズベキスタンについては、「社会セクターの再構築支援(農業・農村開発、教育、保健医療、環境)」を重点分野として、職業教育についても支援する計画である。カザフスタンについては、「持続的経済成長のための政策策定・制度整備・人材育成」を重点分野として、エネルギー資源依存経済を改め、経済多角化を図るために中小企業振興を通じた製造業の育成支援を行うとしている。アゼルバイジャンについては、「保健・医療、教育の質の向

上、環境対策」を日本が支援する開発課題に設定している。

合同研修対象国については、アフガニスタンは「教育及び保健・医療等の基礎生活分野」、キルギスは「経済成長のための基盤整備（市場経済化に資する人材育成)」、パレスチナは「人道支援を含めた民生の安定向上化支援（保健、教育、水、食糧支援及び雇用促進等)」、タジキスタンは「農業開発・産業振興」を援助重点分野に定めている。トルクメニスタンについては、「基礎社会サービス（教育、保健医療、社会保障、防災、基礎インフラ整備)」を支援の重点としている。

日本は対トルコ事業展開計画で、南南協力支援を援助重点分野に定め、「トルコ近隣国の開発ニーズをふまえ、トルコに比較優位性のある分野について南南協力支援を実施する。その際、我が国のこれまでの協力の成果を積極的に活用する」としている。プロジェクトはMoNEへのこれまでの協力成果を活用するものであり、こうした方針とも合致している。

(4) プロジェクトデザインの適切性

先に述べたとおり、対象国のIAT分野の技術教育・職業訓練ニーズは多様であるが、プロジェクトはそうしたニーズに応えうるデザインになっている。加えて、日本はトルコに対して、同分野で長期にわたって協力した実績がある。日本はトルコのIAT学科の設立、IAT分野の教員養成カリキュラム・教材の作成を支援している。日本はトルコと協力して、優位にプロジェクトを進めることができる。

5-3 有効性

プロジェクトの有効性は十分見込める。プロジェクトは、対象国のニーズを把握して研修計画を作成して（成果1)、研修を実施し（成果2)、フォローアップを行い（成果3)、対象国教員のIATに関する技術教育・職業訓練能力を向上させる。成果からプロジェクト目標につながる論理構造も適切であり、計画されている成果はプロジェクト目標を達成するために十分である。各国がプロジェクトへの参加を通して達成すべき具体的な目標は、国ごとにプロジェクト目標の指標として定めることになっている。成果が計画どおり産出され、帰国研修員が研修成果を本国で有効に活用・共有することができれば、プロジェクト目標が達成される可能性は高い。

各成果の目標は適切に設定されていると考えられるが、一部については指標値が設定されていない。プロジェクト開始後、早い段階でプロジェクト目標を含むすべての指標を確定する必要がある。

5-4 効率性

プロジェクトは、効率的に実施されると期待できる。TTCの既存の施設と機材を活用するため、新たな機材を投入する必要はない。研修カリキュラム・教材は、これまでに日本の協力を通して作られたものをTTCが必要に応じて改訂しているため、すぐに活用できるものがある。TTCは年間50コース以上の研修を企画し、延べ700人を超える教員を全国から研修員として迎えるなど、IAT分野の教員研修について十分な経験がある。国際協力についても、アゼルバイジャン向けの

IAT コースの運営経験があり、プロジェクトはこうした経験を活用できる。加えて、トルコ側関係者はこれまでの日本の協力による成果を高く評価していて、日本の技術協力への信頼度も高いため、専門家派遣直後からスムーズに実質的な活動に入ることができると予想できる。プロジェクトの計画はこうしたことをふまえて適切に作成されている。関係者でコスト試算も行われ、その結果も共有されていることから、必要十分な投入が行われ、効率的に活動を実施できると考えられる。

5-5 インパクト

プロジェクトのインパクトとして、TIKA の国際協力に関する実務能力の向上、MoNE と TTC の IAT 分野での技術協力に関する能力の向上が見込める。TTC をトルコ周辺国への技術協力の拠点に育てるという MoNE の構想実現にも寄与するであろう。上位目標である対象国の IAT に関する技術教育・職業訓練能力の向上については、国ごとに事情が異なるため一律に予測することはできないが、それぞれの事情に合わせて達成すべき目標を具体的に設定し、研修、フォローアップを行うことになっているため、達成可能と考えられる。

二次的なインパクトとして、これまでのトルコの対アゼルバイジャン協力の実績から、日本企業を含むトルコ進出企業と対象国との関係構築も期待できる。アゼルバイジャンへの協力では、日本企業の製品を使った研修を行った。今後、アゼルバイジャンが IAT 分野の人材育成を国内でも行えるよう日本企業が TTC を通じて機材を贈与する予定である。

現時点では、負のインパクトは想定されない。

5-6 持続性

プロジェクトの効果の持続性については、インパクト同様、国ごとに事情が異なるため一律に判断できない。他方で、プロジェクト計画は国ごとに目標を設定してフォローアップも行うなど、持続性を高めるデザインになっていること、トルコの周辺国への協力体制については維持・強化されると期待できることから、一定の持続性が見込める。トルコの協力体制については、TIKA の予算や組織体制が強化されていること、MoNE は TTC を国際協力の拠点にする計画を持っていること、TTC は施設、教材、人材の各方面で十分な能力を備えていることなどから、政策・制度、財政、技術の各方面から持続性が高いと予測できる。

添付資料１　要請書

APPLICATION FORM FOR JAPAN'S TECHNICAL COOPERATION

1. Date of Entry: Day 08 Month August Year 2010

2. Applicant:
The Government of the Republic of Turkey
Ministry of National Education
General Directorate of Vocational and Technical Education.

3. Project Title:
Industrial Automation Technology (IAT) Extension Project for Central Asian/Middle East Countries

4. Implementing Agency:
Ministry of National Education
General Directorate of Vocational and Technical Education.

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5. Background of the Project

(Current conditions of the sector, Government's development policy for the sector, issues and problems to be solved, existing development activities in the sector, ete.)

Industrial automation technology has been the basis of contemporary industry, and the basic tendency of technical development. These lead to new fabrication processes, wider implementation of automation technologies, and more utilization of automatic processors and industrial robots in various types of loading devices/machines, in transfer lines and in automatic control systems. For all these technical human resources are needed who can

design, implement, operate, and maintain automation systems.

In this context, the project of "Establishment of Industrial Automation Technologies Departments in Anatolian Technical High Schools" was successfully carried out jointly by Ministry of National Education, General Directorate of Technical Education for Boys (ETÖGM) and Japan International Cooperation Agency (JICA) between 2001-2006 with the aims of establishing industrial automation technologies departments at international standards in Izmir Mazhar Zorlu and Konya Adil Karaağaç Anatolian Technical High Schools, training the teachers of this department in Japan and developing training programs together with the Japanese experts assigned to work in Turkey.

Within the context of the Project;

- **Totally 17 workshops and laboratories at the two above-mentioned schools were equipped with modern, high technology equipments,**
- **25 technical Turkish teachers were trained on industrial automation technologies in Japan for 3 to 9 months,**
- **6 Japanese experts were assigned to work in Turkey by the Japanese authorities for five years during the implementation of the Project,**
- **Short term Japanese experts were assigned to work at Project schools when needed at required numbers,**
- **New technologies were transferred, training materials were prepared and new teaching methods were applied in cooperation with the Japanese experts and the Turkish teachers trained in Japan.**

Since the outputs of this Project, of which the pilot implementation finished in April, 2006, were in line with the sectoral demands, it was planned in 2005 to expand the departments of industrial automation technologies to 20 new schools to be selected according the conditions of industry, employment, population, immigration, and SMEs in the provinces, and "Teacher Training Centre" was constructed at Izmir Mazhar Zorlu Anatolian Technical High School in 2006 with the aim of training the teachers to be assigned to work at new 20 expansion schools.

In 2007, "the Project on Strengthening the Program of Expanding Industrial Automation Technologies Department (SPREAD)" was signed between the Ministry of National Education, General Directorate of Technical Education for Boys (ETÖGM) and Japan International Cooperation Agency (JICA). Within the context of this Project;

- **Technological knowledge of the 25 Turkish teachers trained in Japan have been updated by the Japanese experts,**
- **"Teacher Training System" has been established,**

- **Teacher Training Centre has been improved,**
- **Turkish teachers have been trained in Japan according to the annual program**
- **The Turkish teachers assigned to work at expansion schools have been trained on industrial automation technologies at Teacher Training centre in İzmir.**

In addition, the project of "Training for Azerbaijani Technical Teachers on Industrial Automation Technologies" has been prepared on the demand of Azerbaijan by Ministry of National Education and Turkish International Cooperation and Development Agency (TİKA) and put into effect in 2008. Within the context of this Project, the knowledge and experiences gained through the projects with JICA on industrial automation technologies have been transferred to the Azerbaijani teachers of electric-electronics, ICT, ateliers and workshops at vocational and technical schools in Azerbaijan.

With this project, our General Directorate proposes to transfer the knowledge and experiences acquired through the above-mentioned projects to vocational and technical teachers of industrial automation technologies, electric-electronics, ICT in Azerbaijan, Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan, Iran, Pakistan Syria by means of training to be provided at "Teacher Training Centre" at Izmir Mazhar Zorlu Anatolian Technical High School within the context of the Japanese "Third Country Training Program"

6. Outline of the Project

(1) Overall Goal

(Development effect expected as a resul t of achieveınent of the "Project Purpose" in several years after the end of the project period)

- **Teacher training svstem of Industrial Automation (or equivalent) Technology is developed in target countries.**

(2) Project Purpose

(Objective expected to be achieved by the end of the project period. Elaborate with quantitative indicators if possible)

- **Training courses for teachers in target countries in the field of Industrial Automation (or equivalent) Technology are effectively implemented in Teacher Training Center (TTC).**

(3) Outputs

(Objectives to be realized by the "Project Activities" in order to achieve the "Project Purpose ")

(1) Role and demarcations between related authorities (TTC, MoNE, TIKA, JICA) are defined.

(2) TTC's ability to develop training course curriculum targeted for target countries are improved.

(3) Ability for the effective management of the training course are improved between related authorities. (Needs Survey, Implementing management, Monitoring/feedback/evaluation)

(4) Ability and level of participants from target countries are improved.

(4) Project Activities

(Specific actions intended to produce each "Output " of the project by effective use of the "Input")

(1)-1 : Role and demarcations, procedures for implementation are defined.

(2)-1 : Current technical knowledge/needs of the target countries are gathered and compiled in TTC

(2)-2 : Curriculum based-on-the-needs and level of the target country is developed

(3)-1 : Preparation method for training is improved (Needs Survey, Recuritment of applicants)

(3)-2 : Training implementation management is improved (accomodation, lectures, textbooks, translation, transportations etc)

(3)-3 : Monitoring/Feedback/Evaluation of the training course is improved.

(4)-1: Evaluation/monitoring study is applied to check the attainments of the program.

(5) Input from the Recipient Government

(Counterpart personnel (identify the name and position of the Project manager), support staff, office space, running expenses, vehicles, equipment, etc.)

- **Preparation of the Teacher Training Centre" at Izmir Mazhar Zorlu Anatolian Technical High School for the training to be provided within the context of the Project,**
- **Assignment of the Turkish experts to work at Teacher Training Centre**
- **Assignment of the Turkish experts to work for the development of the training materials,**
- **Determination of the criteria for the selection of the vocational and technical teachers from Azerbaijan, Kazakhstan, Uzbekistan, Turkmenistan, Kyrgyzstan, Tajikistan, Afghanistan, Iran, Iraq and Palestine,**
- **Preparation and provision of orientation training to the participant vocational and technical teachers,**

- **Preparation of action plans for the transfer of the knowledge and experiences acquired through the training program to the respective countries.**

(6) Input from the Japanese Government (Proposed) (Japon hükümetinin projeye katkıları)
(Number and qualification of Japanese experts, training (in Japan and in-country) courses, seminars and workshops, equipment, etc.)

(1) Dispatch of experts (ex. Training Coordination Advisor, Technical experts (based on necessity))

(2) Training in Japan (if necessity arises)

(3) Third Country Training/Seminars in Turkey

7. Implementation Schedule

Month **September** Year **2011** ~ Month **September** Year **2013**

(1) Project Duration: 2011-2013 (1-2 training/year)

(2) Training Duration: 3-4 weeks

8. Implementing Agency

(Budget, staffing, etc.)

The Government of the Republic of Turkey
Ministry of National Education (MoNE), General Directorate of Vocational and Technical Education.
Japan International Cooperation Agency (JICA), Turkey Office

Director General: Hüseyin ACIR
Head of Department: Yücel YÜKSEL

Address:
Milli Eğitim Bakanlığı
06648 Bakanlıklar-Kızılay Ankara
Türkiye
Tel: +90-312-413-1255
Tel:+ 90-312-413-1241
Fax: +90-312-425-1967

Venue of Third Country Training Program (TCTP):
IAT Teacher Training Center, Izmir Mazhar Zorlu Anatolian Technical High School

Address:

373/2 Sok. No.2/2
Bornova / İzmir
Türkiye
Tel: +90 232 342 5857
Fax: +90 232 388 1800

9. Related Activities

(Activities in the sector by the recipient government, other donors and NGOs)

The project of "Training for Azerbaijani Technical Teachers on Industrial Automation Technologies" has been prepared on the demand of Azerbaijan by Ministry of National Education and Turkish International Cooperation and Development Agency (TİKA) and put into effect in 2008. Within the context of this Project, the knowledge and experiences gained through the projects with JICA on industrial automation technologies will have been transferred by the end of 2011 to the Azerbaijani teachers of electric-electronics, ICT, ateliers and workshops at vocational and technical schools in Azerbaijan through the training program in Turkey on industrial automation technologies.

10. *Gender Consideration*

(Any relevant information of the project from gender perspective.)

No discrimination can be considered.

11. Environmental and Social Considerations

(Please fill in the attached screening format.)

12. Beneficiaries (Target Country/Group)

(Population for which positive changes are intended directly and indirectly by implementing the project and gender disaggregated data, if available)

Target Countries (number of participants): (number of participants is yet to be determined)
Group 1. Azerbaijan, Kazakhstan, Kyrgyzstan, (Turkmenistan), Uzbekistan,
Group 2: Iran, Pakistan, Syria

Direct Target Group: Teacher Training Center (TTC)

Indirect Target Group:

- **teachers of vocational and technical high schools**
- **lecturers of vocational and technical colleges/technical universities**
- **trainers of vocational and technical training center (if have)**

13. Security Conditions

There is no risk for security.

14. Others

Screening Format

Question 1 Address of a project site

http://etogm.meb.gov.tr/

Question 2 Outline of the project

2-1 Does the project come under following sectors?

■Yes ☐No

If yes, please mark corresponding items.

☐Mining development
■Industrial development
☐Thermal power (including geothermal power)
☐Hydropower, dams and reservoirs
☐River/erosion control
☐Power transmission and distribution lines
☐Roads, railways and bridges
☐Airports
☐Ports and harbors
☐Water supply, sewage and waste treatment
☐Waste management and disposal
☐Agriculture involving large-scale land-clearing or irrigation
☐Forestry
☐Fishery
☐Tourism

2-2 Does the project include the following items?

☐Yes ■No

If yes, please mark following items.

☐Involuntary resettlement (scale: households, persons)
☐Groundwater pumping (scale: m3/year)
☐Land reclamation, land development and land-clearing (scale: hectors)
☐Logging (scale: hectors)

2-3 Did the proponent consider alternatives before request?

□Yes: Please describe outline of the alternatives

(　　)

■No

2-4 Did the proponent have meetings with related stakeholders before request?

■Yes　□No

If yes, please mark the corresponding stakeholders.

■Administrative body

□Local residents

□NGO

□Others (　　)

Question 3

Is the project a new one or an on-going one? In case of an on-going one, have you received strong complaints etc. from local residents?

■New ☐On-going(there are complaints) ☐On-going (there are no complaints)

☐Others 〔　　〕

Question 4 Name of laws or guidelines:

Is Environmental Impact Assessment (EIA) including Initial Environmental Examination (IEE) required for the project according to laws or guidelines in the host country?

☐Yes　■No

If yes, please mark corresponding items.

□Required only IEE　(□Implemented, □on going, □planning)

□Required both IEE and EIA　(□Implemented, □on going, □planning)

□Required only EIA　(□Implemented, □on going, □planning)

□Others: 〔　　〕

Question 5

In case of that EIA was taken steps, was EIA approved by relevant laws in the host country? If yes, please mark date of approval and the competent authority.

☐Approved: without a supplementary condition	☐Approved: with a supplementary condition	☐Under appraisal

(Date of approval:　Competent authority:　)

☐Not yet started an appraisal process

☐Others:(　　)

Question 6

If a certificate regarding the environment and society other than EIA, is required, please indicate the title of certificate.

☐Already certified ☐Required a certificate but not yet done

Title of the certificate :( )

☐Not required

☐Others [ ]

Question 7

Are following areas located inside or around the project site?

☐Yes ■No ☐Not identified

If yes, please mark the corresponding items.

☐National parks, protected areas designated by the government (coast line, wetlands, reserved area for ethnic or indigenous people, cultural heritage) and areas being considered for national parks or protected areas

☐Virgin forests, tropical forests

☐Ecological important habitat areas (coral reef, mangrove wetland, tidal flats)

☐Habitat of valuable species protected by domestic laws or international treaties

☐Likely salts cumulus or soil erosion areas on a massive scale

☐Remarkable desertification trend areas

☐Archaeological, historical or cultural valuable areas

☐Living areas of ethnic, indigenous people or nomads who have a traditional lifestyle, or special socially valuable area

Question 8

Does the project have adverse impacts on the environment and local communities?

☐Yes ■No ☐Not identified

Reason: [ ]

Question 9

Please mark related environmental and social impacts, and describe their outlines.

☐Air pollution ☐Waste

☐Water pollution ☐Noise and vibration

☐Soil pollution ☐Ground subsidence

☐Offensive odors
☐Geographical features
☐Bottom sediment
☐Biota and ecosystem
☐Water usage
☐Accidents
☐Global warming
☐Involuntary resettlement
☐Local economy such as employment and livelihood etc.
☐Land use and utilization of local resources

☐Social institutions such as social infrastructure and local decision-making institutions
☐Existing social infrastructures and services
☐The poor, indigenous of ethnic people
☐Maldistribution of benefit and damage
☐Local conflict of interests
☐Gender
☐Children's rights
☐Cultural heritage
☐Infectious diseases such as HIV/AIDS etc.
☐Others ( )

Outline of related impacts:

[ ]

Question 10

Information disclosure and meetings with stakeholders

10-1 If the environmental and social considerations are required, does the proponent agree on information disclosure and meetings with stakeholders in accordance with JICA Guidelines for Environmental and Social Considerations?

☐Yes ☐No

10-2 If no, please describe reasons below.

[ ]

添付資料２　協議議事録（R/D　2011 年 11 月 28 日署名・交換）

RECORD OF DISCUSSIONS
ON
THE INDUSTRIAL AUTOMATION TECHNOLOGY (IAT) EXTENSION PROJECT FOR CENTRAL ASIAN / MIDDLE EAST COUNTRIES IN THE REPUBLIC OF TURKEY
AGREED UPON BETWEEN
THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE REPUBLIC OF TURKEY
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

Ankara, November 28, 2011

Mr. Akio SAITO
Chief Representative
JICA Turkey Office
Japan International Cooperation Agency

Mr. Omer AÇIKGÖZ
Director General,
General Directorate of Vocational and Technical Education
Ministry of National Education
The Republic of Turkey

Dr. Serdar ÇAM
President,
Turkish Cooperation and Coordination Agency
Prime Ministry of the Republic of Turkey

Based on the minutes of meetings on the Detailed Planning Survey on "The Industrial Automation Technology (IAT) Extension Project for Central Asian / Middle East Countries" (hereinafter referred to as "the Project") signed on 18 November 2011, among the Ministry of National Education (hereinafter referred to as "MoNE") of the Republic of Turkey (hereinafter referred to as "Turkey"), Japan International Cooperation Agency (hereinafter referred to as "JICA") and Turkish Cooperation and Coordination Agency (hereinafter referred to as "TIKA"), a series of discussions were held among the three parties and relevant organizations to develop a detailed plan of the Project.

Both the Japanese and Turkish parties agreed on the details of the Project and main points discussed as described in the Appendix 1 and the Appendix 2, respectively, and to request their respective governments to proceed with the necessary procedures for implementation of the Project.

All parties also agreed that MoNE, the counterpart to JICA, will be responsible for the implementation of the Project in cooperation with JICA and TIKA, coordinating with other relevant organizations and ensuring that the self-reliant operation of the Project is sustained during and after the implementation period so that the Project will contribute toward social and economic development of Turkey as well as the target countries of the Project.

The Project will be implemented within the framework of the Note Verbales to be exchanged between the Government of Japan and the Government of the Republic of Turkey (herein after referred to as "GoT").

The effectiveness of the Record of Discussions is subject to the exchange of the Note Verbales.

Appendix 1:	Project Description
Appendix 2:	Main Points Discussed
Appendix 3:	Minutes of Meetings on the Detailed Planning Survey on The Industrial Automation Technology (IAT) Extension Project for Central Asian / Middle East Countries

Appendix 1

PROJECT DESCRIPTION

The three parties confirmed that there was no change in the Project Description agreed on in the Minutes of Meetings concerning the Detailed Planning Survey on the Project signed on 18 November 2011 (Appendix 3).

I. BACKGROUND

GoT has been focused on implementing policy measures to strengthen its global competitiveness of manufacturing industries, and to introduce advanced technology and promote capital intensive industries to enable the delivery of high valued products and services since the 1990s. GoT has prioritized the improvement and strengthening of technical and vocational education schools in its national development policy so as to supply the labor market with capable technicians and skilled human resources.

In this context, the project "Establishment of Industrial Automation Technologies Departments in Anatolian Technical High Schools" was successfully carried out jointly by the General Directorate of Vocational and Technical Education (hereinafter referred to as "GDVTE") of MoNE and JICA from 2001 to 2006 with the aims of establishing industrial automation technology (IAT) departments at international standards in Izmir Mazhar Zorlu and Konya Adil Karaağaç Anatolian Technical High Schools, training the teachers of this department in Japan and developing training and education programs for IAT.

Following the successful implementation of the above-mentioned project, which produced outputs in line with the sectoral demands, it was planned in 2005 to newly establish IAT departments in 20 schools. The Teacher Training Centre (hereinafter referred to as "TTC") was established at Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School in 2006 with the aim of developing the teaching staff who will work at the IAT departments of the 20 schools.

In 2007, GDVTE of MoNE and JICA commenced "The Project on Strengthening the Program of Expanding Industrial Automation Technologies Department" (SPREAD). This project established the Teacher Training System within TTC, and teachers and staff at TTC were trained.

Against such backgrounds, GoT, gaining confidence through these successful initiatives, decided to transfer the knowledge and experiences acquired through the above-mentioned projects to vocational and technical teachers of industrial automation technology (including electric-electronics, mechatronics, mechanics, ICT) fields in the countries in Central Asia and Middle East Region by means of training to be provided at TTC of Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School. GoT requested the Government of Japan for assistance and also requested support from TIKA for project implementation. Responding to this request, JICA dispatched the detailed planning survey team to Turkey and discussed and agreed on the framework for this technical cooperation project with the Turkish side.

II. OUTLINE OF THE PROJECT

1. Project Framework

The details of the Project are described in the logical framework (Project Design Matrix: PDM) (Attachment 1-1) and the tentative Plan of Operation (PO) (Attachment 1-2).

2. Implementation Structure

The Project Implementation Structure Plan is given in the Attachment 1-3. The roles and responsibilities of relevant organizations are as follows:

(1) MoNE

(a) Director General, General Directorate of Technical and Vocational Education, MoNE, as the Project Director, will bear overall responsibility of the Project.
(b) Head of Department, General Directorate of Technical and Vocational Education, MoNE, as the Deputy Project Director, will bear responsibility of the management of the Project.
(c) MoNE will bear overall responsibilities to coordinate among all stakeholders.
(d) MoNE will coordinate with relevant Turkish Embassies in the target countries whenever the necessity arises.

(2) Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School

(a) School Principal of the Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School, as the Project Manager, will bear administrative and technical responsibility for the implementation of project activities.
(b) TTC will develop implementation plans of the training programs for the target countries.
(c) TTC will lead the implementation of the training programs within the Project framework

(3) TIKA

(a) TIKA will support the implementation of the Project through making necessary arrangement, coordination, information gathering, communication, and by also playing a role as a focal point for follow-up activities with relevant personnel and organizations within the target countries.

(4) JICA Experts

(a) The JICA experts will give necessary technical guidance, advice and recommendations to MoNE, TTC, and TIKA on any matters pertaining to the implementation of the Project.

(5) Joint Coordinating Committee

Joint Coordinating Committee (hereinafter referred to as "JCC") will be established in order to facilitate inter-organizational coordination. JCC will be held at least once a year and whenever deems it necessary. JCC will approve the annual work plan, review overall progress, conduct monitoring and evaluation of the Project, and exchange opinions on major issues that arise during the implementation of the Project. A list of proposed members of JCC is shown in Attachment 1-4.

3. Project Site and Beneficiaries

The Project site will be TTC of Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School. The direct beneficiaries will be the technical and vocational school teachers teaching industrial automation technology and related subjects in the target countries.

4. Duration

The duration of the Project will be three (3) years starting from the first day of the dispatch of Japanese expert(s) to Turkey.

5. Reports

MoNE and JICA experts will jointly prepare the following reports in English.

(1) Progress Report on semiannual basis until the project completion.
(2) Project completion Report at the time of project completion

6. Environmental and Social Considerations

MoNE agreed to abide by "JICA Guidelines for Environmental and Social Considerations" in order to ensure that appropriate considerations will be made for environmental and social impacts of the Project.

III. UNDERTAKINGS OF MoNE

1. MoNE will take necessary measures to:

(1) ensure that the technologies and knowledge acquired by the Turkish nationals as a result of Japanese technical cooperation contributes to the economic and social development of Turkey as well as the target countries of the Project, and that the knowledge and experience acquired by the personnel of Turkey from technical training as well as the equipment provided by JICA will be utilized effectively in the implementation of the Project;
(2) grant privileges, exemptions and benefits to the JICA experts and their families, which are no less favorable than those granted to experts and members of the missions and their families of third countries or international organizations performing similar missions in Turkey;
(3) provide security-related information as well as measures to ensure the safety of the JICA experts;
(4) permit the JICA experts to enter, leave and sojourn in Turkey for the duration of their assignments therein and exempt them from foreign registration requirements and consular fees;
(5) exempt the JICA experts from taxes and any other charges on the equipment, machinery and other material necessary for the implementation of the Project;
(6) exempt the JICA experts from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to them and/or remitted to them from abroad for their services in connection with the implementation of the Project; and
(7) meet taxes and any other charges on the equipment, machinery and other material, necessary for the implementation of the Project.

2. MoNE will bear claims, if any arise, against the JICA experts resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Project, except when such claims arise from gross negligence or willful misconduct on the part of the JICA experts.

IV. EVALUATION

JICA, MoNE, and TIKA will jointly conduct the following evaluations and reviews.

1. Terminal evaluation during the last six (6) months of the cooperation term

JICA may conduct the following evaluations and surveys to mainly verify the sustainability and impact of the Project and draw lessons. In such cases MoNE, and TIKA are required to provide the necessary support.

2. Ex-post evaluation three (3) years after the project completion, in principle
3. Follow-up surveys on necessity basis

V. PROMOTION OF PUBLIC SUPPORT

For the purpose of promoting support for the Project, MoNE and TIKA will take appropriate measures to make the Project widely known to the people of Turkey.

VI. MUTUAL CONSULTATION

JICA, MoNE, and TIKA will consult each other whenever any major issues arise in the course of Project implementation.

VII. AMENDMENTS

The Record of Discussion may be amended by the minutes of meetings among JICA, MoNE and TIKA. The minutes of meetings will be signed by authorized persons of all parties who may be different from the signer of the Record of Discussions.

Attachment 1-1 Project Design Matrix
Attachment 1-2 Tentative Plan of Operation
Attachment 1-3 Project Implementing Structure Plan
Attachment 1-4 List of Proposed Members of Joint Coordination Committee

Attachment 1-1

Project Design Matrix (PDM)

PROJECT TITLE: The Industrial Automation Technology (IAT) Extension Project for Central Asian / Middle East Countries DURATION: Year 2012 – 2015 (3 years)

IMPLEMENTING AGENCY: Ministry of National Education (MoNE) COLLABORATING AGENCY: Turkish Cooperation and Coordination Agency (TIKA)

PROJECT SITE: Teachers Training Center (TTC) of Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School

TARGET COUNTRIES: 1) Country Focused Training: Azerbaijan, Kazakhstan, Pakistan and Uzbekistan; and 2) Group Training: Afghanistan, Kyrgyzstan, Palestine, Tajikistan and Turkmenistan

TARGET GROUP: Teachers teaching IAT and related subjects in technical and vocational schools in target countries Version 0.1 (2011.11.18)

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Super Goal IAT human resources are developed in target countries.			
Overall Goal Technical education and vocational training capacity on IAT of target countries is enhanced.	*Country specific targets to be set within six months of project commencement.*		
Project Purpose Technical education and vocational training capacity of teachers in IAT in target countries is enhanced.	*Country specific targets to be set within six months of project commencement. (Below are examples).* *Country A:* *1) At least XX teachers become capable of teaching basic IAT subjects.* *2) Basic level IAT course text book is developed.* *Country B:* *1) At least XX teachers become capable of updating text books on IAT.* *2) Curriculum on IAT education is improved.*	*Evaluation of training/lessons conducted by ex-participants* *Text book assessment by Turkish/Japanese experts* *Text book assessment by Turkish/Japanese experts* *Curriculum assessment by Turkish/Japanese experts*	Target countries utilize training achievements to enhance capacity of teachers and institutions engaged with IAT.
Outputs 1. Training for target group is appropriately planned.	1) Appropriate training targets are set for each country focused training country 2) Appropriate training targets are set for group training 3) Appropriate training plans are prepared for each of four country-focused training group countries and for group training	Agreement document prepared with each country Course target Training plans prepared and training evaluation (questionnaire to participants)	Ex-participants utilize/share training achievements in home country.
2. Training for target group is effectively provided.	1) At least XX % of participants in country focused training sufficiently understands content of training. 2) At least XX % of participants in group training sufficiently understands content of training.	Training evaluation (test to participants) Training evaluation (test to participants)	
3. Follow-up system is established.	1) Web-based information system is sufficiently maintained. 2) Training impact is properly assessed in second and third year for in country focused training. 3) Training impact evaluation is properly conducted.	Training impact evaluation (questionnaire to ex-participants) Feedback collected from participants at beginning of training in second and third year. Training impact evaluation report	

Narrative Summary	Inputs		Important Assumptions
Activities 1-1 Identify detailed training needs of each country. 1-2 Select target institution(s) in each country. 1-3 Establish specific project targets for each country. 1-4 Develop/ improve training curriculum. 1-5 Prepare/ improve training material. 1-6 Determine training schedule. 2-1 Select participants. 2-2 Arrange logistics 2-3 Implement training. 2-4 Evaluate training. 3-1 Develop follow-up plan. 3-2 Develop web-based information sharing system. 3-3 Conduct follow-up. 3-4 Evaluate training impact.	<u>Turkey Side</u> 1) Personnel ➢ Project Director (Director General, General Directorate of Technical and Vocational Education) ➢ Deputy Project Director (Head of Department, General Directorate of Technical and Vocational Education) ➢ Project Manager (Principal, Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School) ➢ Teachers of TTC ➢ Focal point of TIKA 2) Facilities ➢ Office space for experts at TTC ➢ Training facilities at TTC 3) Available data and information related to project 4) Recurrent costs ➢ Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and other materials owned by Turkey side ➢ Utility and other basic expenses to run project 5) Following training cost: ➢ Interpretation, Translation, Meeting expenses, Training material, Document printing, Excursions etc 6) Travel cost of joint needs survey mission to Azerbaijan, Kazakhstan, Pakistan and Uzbekistan for Turkish side	<u>Japanese Side</u> 1) Experts ➢ Chief Advisor/ Training Management ➢ Coordinator/ Curriculum Development ➢ Other fields 2) Following training cost: ➢ Air fare, Transportation, Per-diem, Accommodation, Insurance etc. 3) Travel cost of joint needs survey mission to Azerbaijan, Kazakhstan, Pakistan and Uzbekistan for Japanese side	**Preconditions** Target countries participate in project.

Attachment 1-2
Tentative Plan of Operation (PO)

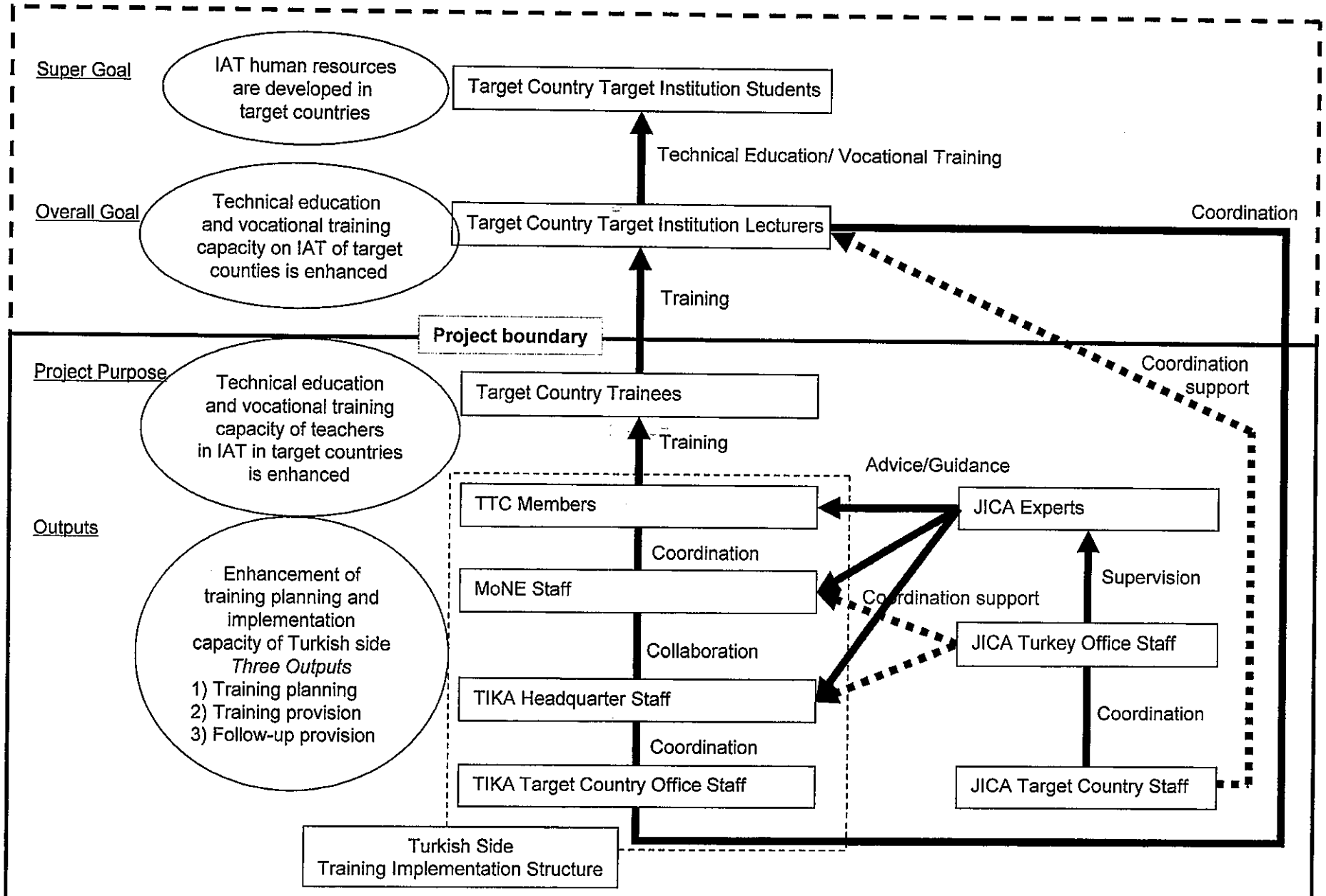
The Industrial Automation Technology (IAT) Extension Project for Central Asian /Middle East Countries

Version 0.1 2011.11.18

Activities	1st Year				2nd Year				3rd Year				*Responsible Person*
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Output 1: Training for target group is appropriately planned.													
1-1 Identify detailed training needs of each country.													
1-1-1 Conduct desk-top needs assessment for all target countries.													
1-1-2 Study current situation in Azerbaijan, Kazakhstan, Pakistan and Uzbekistan and consult stakeholders on training needs.													
1-2 Select target institution(s) in each country.													
1-3 Establish specific project targets for each country.													
1-4 Develop/ improve training curriculum.													
1-5 Prepare/ improve training material.													
1-6 Determine training schedule.													
Output 2: Training for target group is effectively provided.													
2-1 Select participants.													
2-1-1 Select participants of Azerbaijan, Kazakhstan, Pakistan and Uzbekistan.													
2-1-2 Select participants for group training.													
2-2 Arrange logistics.													
2-3 Implement training.													
2-3-1 Conduct training for Azerbaijan.													
2-3-2 Conduct training for Kazakhstan.													
2-3-3 Conduct training for Pakistan.													
2-3-4 Conduct training for Uzbekistan.													
2-3-5 Conduct group training.													
2-4 Evaluate training.													
Output 3: Follow-up system is established.													
3-1 Develop follow-up plan.													
3-2 Develop web-based information sharing system.													
3-3 Conduct follow-up.													
3-4 Evaluate training impact.													
Determine PDM indicators.													
Terminal Evaluation													

Attachment 1-3

Project Implementation Structure Plan



Attachment 1-4

List of Proposed Members of the Joint Coordinating Committee

1. Chairperson: Director General, General Directorate of Technical and Vocational Education, MoNE

2. Members of the Turkish side:
   a. Deputy Director General, General Directorate of Technical and Vocational Education, MoNE
   b. Head of Department, General Directorate of Technical and Vocational Education, MoNE
   c. School Principal, Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School
   d. Chief of IAT Department, Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School (TTC)
   e. Representatives of TIKA

3. Members of the Japanese side:
   a. JICA Experts
   b. Representative of JICA Turkey Office
   c. Other personnel concerned, to be nominated by JICA as needed

NOTE: Official(s) of the Embassy of Japan and other individuals deemed necessary by the Chairperson may attend the JCC as observe(s)

Appendix 2

MAIN POINTS DISCUSSED

1. Detailed Roles and Responsibilities / Inputs of Stakeholders

The detailed roles and responsibilities as well as the inputs to be provided by each concerned party within the project implementation structure was agreed as shown in Attachment 2-1.

2. Cost sharing of the training courses

The provisional distribution of expenditure items for each training courses among MoNE, JICA and TIKA is shown in Attachment 2-2. The actual distribution of costs will be discussed and finalized among the three parties according to the detailed estimation prior to the commencement of each course. The actual cost sharing rate among the three parties are subject to change for each course depending on the actual costs required and discussion results. Shared portion of JICA shall not exceed seventy percent (70%) of the total amount.

Attachment 2-1 Detailed Roles and Responsibilities / Inputs of Stakeholders
Attachment 2-2 Provisional Distribution of Costs for Training

Detailed Roles and Responsibilities

Organization	Roles and Responsibilities / Inputs
Izmir Mazhar Zorlu School Teacher Training Center	*Roles and Responsibilities* ・ Develop implementation plan of the Trainings within the project framework ・ Lead the implementation of the Trainings - Analyses of target, curriculums, training contents, materials, etc. - Development of course contents and materials - Organization of logistical arrangements - Provision of lectures and site visits - Compilation of implementation reports - Implementation of monitoring of the ex-participants' activities - Provision of follow-up support to the ex-participants - Conduct initial selection of training candidates *Inputs* ・ Principal of Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School to be the "Project Manager" who will bear administrative and technical responsibility for the implementation of the Project. ・ Services of counterpart personnel and administrative personnel ・ Lecturers / instructors for the training ・ Suitable office space for JICA Experts with necessary equipment ・ Supply and/or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary owned by Turkey side. ・ Utility and other basic expenses to run the Project. ・ Available data and information related to the Project ・ Information as well as support in obtaining medical service for the JICA Experts
Ministry of National Education	*Roles and Responsibilities* ・ Take overall responsibility of the management and implementation of the Project ・ Overall coordination among all stakeholders ・ Coordinate with relevant Turkish Embassies in the target countries whenever the necessity arises ・ Supervise the selection process of candidates for training and confirm the selection *Inputs* ・ Director General of General Directorate of Vocational and Technical Education to be the "Project Director" who will bear overall responsibility of the Project. ・ Head of Department of General Directorate of Vocational and Technical Education to be the "Deputy Project Director" who will bear responsibility of the management of the Project. ・ Services of counterpart personnel ・ Allocation of running expenses within MoNE, necessary for the Project ・ Budget for Training Implementation Expenses (Meeting Expenses, Document Printing, Other Expenses etc.)

TIKA Headquarters	*Roles and Responsibilities* ・ Coordination with MoNE, TTC, JICA, and TIKA Program Coordination Offices (PCOs) ・ Support the implementation of the Trainings - Developing GI - Compiling and providing country information to TTC - Provision of feedbacks to TTC according to gathered information from TIKA PCOs regarding general information of country situation, feedbacks from participants, and potential training needs of the Target countries - Coordinate and support logistical arrangement for selection procedures of candidates - Participate in selection of candidates. - Supporting of agreed portion of logistical arrangements *Inputs* ・ Budget for Training Implementation Expenses (Translation, Excursion Expenses, Consumption Material etc.) ・ Expenses of Turkish members to participate in joint needs survey mission to country focused training target countries.
TIKA Offices in Target Countries	*Roles and Responsibilities* ・ Coordinate with the target countries for the implementation of the Trainings - Coordination with the target organizations for proper selection of nominees - Distribution of GI and gathering of application forms - Notifying the selection results to the respective governments - Provide support to the participants for departure and giving orientation - Gather general information of country situation, feedbacks from participants, and potential training needs of the Target countries - Become focal point for the follow-up activities toward the ex-participants.
JICA Experts	*Roles and Responsibilities* ・ Provide overall support to the project through the provision of facilitation and technical advice to MoNE, TTC, and TIKA ・ Support the implantation of the Trainings by giving technical lectures in the agreed field ・ Participate in selection of candidates for trainings
JICA Turkey Office	*Roles and Responsibilities* ・ Coordinate with MoNE, TTC, TIKA, JICA Experts and JICA Offices *Inputs* ・ Dispatch of the Experts (Chief Advisor/ Training Management, Project Coordinator / Curriculum Development, Other fields) ・ Budget for Training Invitation Expenses (Air Fare, Transportation, Per-diem, Accommodation, Health Insurance etc.) ・ Expenses of JICA Experts to participate in joint needs survey mission to country focused training target countries.
JICA Offices in Target Countries	*Roles and Responsibilities* ・ Support coordination with target countries whenever necessary

Attachment 2-2

Provisional Distribution of Costs for Training Courses

ITEM OF EXPENSE	BREAKDOWN	JICA	MoNE	TIKA	TOTAL
I. Invitation Expenses					
1. Air Fare	International Flights: X TL x X per.	O			
2. Transportation	X TL x X times (from/to airport)	O			
3. Per-diem	X TL x X per. x Xdays	O			
4. Accommodation	Izmir: X TL x X per. x X days	O			
5. Health Insurance	X TL x X per.	O			
Sub Total I					
II. Training Expenses					
1. Translation Expenses	Interpreter X TL x X per. (Russian.-Turkish Sim. & Cons. Trans.) x X days			O	
	Accommodation: X TL x X per. x X days			O	
	Transportation: X TL x X per.			O	
	Translation equipment Translation equipment rent: X TL x X days			O	
	Written Translation			O	
2. Excursion Expenses	Midibus for X days (for city transfers and inter-city transportations)			O	
	Social Activities: X TL x Xpers			O	
3. Consumption Material	Training Kits, writing tools, paper, briefcase, floppy disks, portfolio, banner, copy etc.			O	
4. Meeting Expenses	Opening ceremony = X TL x X pers.		O		
	Closing reception = X TL x X pers.		O		
5. Printing	Publications, Invitation cards, textbooks, certificates, badges, GI, program, etc.		O		
6. Others	Communication fee		O		
	Miscellaneous				
Sub Total II					
Grand Total					
Cost Sharing Rate (%)					

MINUTES OF MEETING
BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
THE AUTHORITIES CONCERNED OF
THE REPUBLIC OF TURKEY
ON
THE INDUSTRIAL AUTOMATION TECHNOLOGY (IAT) EXTENSION PROJECT FOR CENTRAL ASIAN / MIDDLE EAST COUNTRIES

The Detailed Planning Survey Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA"), headed by Mr. Hiroyuki Takada, conducted a survey from November 14th to 18th, 2011, for the purpose of formulating the proposed Technical Cooperation Project "The Industrial Automation Technology (IAT) Extension Project for Central Asian / Middle East Countries" (hereinafter referred to as "the Project").

During the survey in the Republic of Turkey (hereinafter referred to as "Turkey"), the Team had a series of discussions with the authorities concerned of Turkey, jointly developed idea and exchanged views on the Project.

As a result of the discussions, both sides agreed the matters referred to in the documents attached hereto.

Ankara, November 18, 2011

Mr. Hiroyuki TAKADA
Leader,
Detailed Planning Survey Team
Japan International Cooperation Agency

Mr. Hüsamettin KAYA
Deputy Director General,
General Directorate of Vocational and Technical Education
Ministry of National Education
The Republic of Turkey

Dr. Ali Özgün ÖZTÜRK
Acting Head of External Relations and Partnerships Department
Turkish Cooperation and Coordination Agency
The Republic of Turkey

ATTACHED DOCUMENT

1. Project Strategy

A series of consultations have identified the following project strategies.

- The project activities will build on the achievements of "The Project on Strengthening the Program of Expanding Industrial Automation Technologies Department" (SPREAD);
- The Project will focus on developing technical education and vocational training capacity of teachers in industrial automation technology (IAT) and related subjects in target countries of Central Asia and Middle East Region.
- The main activities of the Project will be provision of training courses for the target countries in Turkey; and
- Through the implementation of the project activities, the Project should also build the institutional capacity of Turkish related stakeholders for the effective implementation of international training courses.

2. Project Title

The project title was agreed to be "The Industrial Automation Technology (IAT) Extension Project for Central Asian / Middle East Countries." Although the main target regions are defined as Central Asia and Middle East within the title, countries from other region can be considered to be included within the target countries according to their needs, upon mutual consent of the related authorities.

3. Recommended draft "Record of Discussions (R/D)"

The Record of Discussions (R/D), which is the official document that defines the content of a technical cooperation project, was prepared and confirmed through a series of discussions as attached in Annex 1. The draft will be finalized and signed by the Ministry of National Education (hereinafter referred to as "MoNE"), Turkish Cooperation and Coordination Agency (hereinafter referred to as "TIKA"), and JICA after the approval for the project implementation by JICA Headquarters.

4. Project Framework

The framework of the Project was agreed based on the initial plan which is spelled out in the Draft Record of Discussions (R/D) (Annex 1).

5. Draft "Project Design Matrix (PDM)" and "Plan of Operation (PO)"

The initial drafts of PDM (ver.0) and PO (ver.0) were prepared as Attachment 1-1, 1-2 of the Draft Record of Discussions (R/D) (Annex 1). The PDM and PO will be used as management tools of the Project. They should be finalized and approved by the Joint Coordination Committee (JCC) as PDM (ver.1) and PO (ver.1) within six (6) months after the commencement of the Project. They can be revised as needed in the course of project implementation with mutual consent of the related authorities and approval by JCC.

6. Objectively Verifiable Indicators

The Objectively Verifiable Indicators in the PDM should be finalized within six (6) months after the official start of the Project. The "XX" needs to be replaced with specific numbers. Indicators for the Project Purpose and Overall Goal require to be set for each target countries.

7. Target Countries

It was agreed to include nine (9) countries, namely Pakistan, Uzbekistan, Kazakhstan, Azerbaijan, Kyrgyzstan, Turkmenistan, Tajikistan, Afghanistan, and Palestine as the target countries for which to be invited to send participants to the training courses in Turkey implemented within the project framework.

Among the initial target countries proposed from MoNE, Syria and Iraq was excluded due to its unstable and sensitive political situation. Iran was excluded due to low eagerness of the relevant Iranian authorities to cooperate with Turkey. If there is situation change during the course of the project implementation, such countries can be considered to be included in the target countries upon mutual consent of the related authorities. Conversely, any country can also be excluded from the target countries when deemed inappropriate as a target country, upon mutual consent of the related authorities.

8. Grouping of Target Countries

Target countries were provisionally divided into two (2) groups namely "Country Focused Target" countries and "Group Target" countries as shown in Annex 2, based on the preliminary analysis of their industry, technical level and expected level of training needs. "Country Focused Target" countries are assumed to be relatively advanced in IAT compared to "Group Target" countries. Therefore, the former will be provided with relatively advanced and tailor made training. The latter will be given basic introductory level training. The grouping of countries may be reviewed whenever needed in the course of the project implementation according to more detailed analysis of the each country's situation and feedbacks from the training results, upon mutual consent of the relevant authorities.

9. Training Strategy for Each Group

Corresponding effectively to the diverse training needs of the target countries, different training strategy will be applied toward the two (2) country groups mentioned in the above Article 8. Following strategies for each group were agreed.

9.1 Country Focused Target Countries

- Training courses should be oriented towards the specific needs of each country. Country focused training method (participants for each training session will come from a singly country) will be applied. A tailor made curriculum will be developed for each country.
- The final goal to be achieved through the three-year training and a road map will be set for each target country through direct discussions between relevant authorities of the target countries and the project members.
- Considering the final goal, the target organization(s) and target group will be defined for each target country at the beginning of the Project.
- In order to effectively implement the above-mentioned measures, a needs survey mission composed of TTC, MoNE, TIKA and JICA expert team members will be dispatched to each country.
- Training will be given once a year, with step by step progress each year according to the roadmap prepared for each country. Basically, the target group will be fixed and the same group of individuals will be invited every year to the training. The target group will be given homework to do between the training

each year for continuous capacity building.

- As training will be focused and concentrated, the duration for each course will provisionally be three weeks.

9.2 Group Target Countries

- Since the training needs of each country are expected to be at the very basic level, the training for this country group will focus on giving basic introduction on IAT.
- Group Training Method (participants will come from several countries for a given training course) will be applied, in order to efficiently reach all target countries.
- Participants will be widely recruited among organizations in each target country. Participants may differ every year.
- In order to correspond to various technical level, language, culture among the participants, number of participants will be kept small compared to the Country Focused Training.
- In order to cover a wide variety of topics, duration for each course will provisionally be four weeks.

10. Provisional Training Implementation Plan

Provisional training implementation plan showing the type, number of courses, number of participants etc. for each country group was agreed as shown in Annex 3. The plan can be revised whenever necessary upon mutual consent of related authorities.

11. Office Space

It was agreed that, MoNE will provide an office space in the TTC, Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School for the JICA Experts.

12. Provisional Timeline

The following timeline is suggested for the preparation of the Project

(1) Final confirmation of the Draft R/D by MoNE, TIKA and JICA by November 25, 2011

(2) Signing of R/D: by the end of November, 2011

(3) Commencement of the Project: Second quarter of 2012

Prior to the commencement of the Project,

Turkish side will:

(a) Prepare list of counterparts and administrative personnel;

(b) Prepare a project office in TTC;

(c) Prepare counterpart budget for the Project;

JICA will:

(a) Complete recruitment of the experts;

(b) Prepare project budget for the Project.

Annex 1 Draft Record of Discussions

Annex 2 Proposed Grouping of the Target Countries

Annex 3 Proposed Training Implementation Plan

Annex 1

<DRAFT>
RECORD OF DISCUSSIONS
ON
THE INDUSTRIAL AUTOMATION TECHNOLOGY (IAT) EXTENSION PROJECT FOR CENTRAL ASIAN / MIDDLE EAST COUNTRIES
IN
THE REPUBLIC OF TURKEY
AGREED UPON BETWEEN
THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE REPUBLIC OF TURKEY
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

Ankara, [date]

Mr. Akio SAITO
Chief Representative
JICA Turkey Office
Japan International Cooperation Agency

Mr. Omer ACIKGOZ
Director General,
General Directorate of Vocational and Technical Education
Ministry of National Education
The Republic of Turkey

Dr. Serdar CAM
President,
Turkish Cooperation and Coordination Agency
The Republic of Turkey

Annex 1

Based on the minutes of meetings on the Detailed Planning Survey on "The Industrial Automation Technology (IAT) Extension Project for Central Asian / Middle East Countries" (hereinafter referred to as "the Project") signed on 18 November 2011, among the Ministry of National Education (hereinafter referred to as "MoNE") of the Republic of Turkey (hereinafter referred to as "Turkey"), Japan International Cooperation Agency (hereinafter referred to as "JICA") and Turkish Cooperation and Coordination Agency (hereinafter referred to as "TIKA"), a series of discussions were held among the three parties and relevant organizations to develop a detailed plan of the Project.

Both the Japanese and Turkish parties agreed on the details of the Project and main points discussed as described in the Appendix 1 and the Appendix 2, respectively, and to request their respective governments to proceed with the necessary procedures for implementation of the Project.

All parties also agreed that MoNE, the counterpart to JICA, will be responsible for the implementation of the Project in cooperation with JICA and TIKA, coordinating with other relevant organizations and ensuring that the self-reliant operation of the Project is sustained during and after the implementation period so that the Project will contribute toward social and economic development of Turkey as well as the target countries of the Project.

The Project will be implemented within the framework of the Note Verbales to be exchanged between the Government of Japan and the Government of the Republic of Turkey (herein after referred to as "GoT").

The effectiveness of the Record of Discussions is subject to the exchange of the Note Verbales.

Appendix 1:	Project Description
Appendix 2:	Main Points Discussed
Appendix 3:	Minutes of Meetings on the Detailed Planning Survey on The Industrial Automation Technology (IAT) Extension Project for Central Asian / Middle East Countries

Appendix 1

PROJECT DESCRIPTION

The three parties confirmed that there was no change in the Project Description agreed on in the Minutes of Meetings concerning the Detailed Planning Survey on the Project signed on 18 November 2011 (Appendix 3).

I. BACKGROUND

GoT has been focused on implementing policy measures to strengthen its global competitiveness of manufacturing industries, and to introduce advanced technology and promote capital intensive industries to enable the delivery of high valued products and services since the 1990s. GoT has prioritized the improvement and strengthening of technical and vocational education schools in its national development policy so as to supply the labor market with capable technicians and skilled human resources.

In this context, the project "Establishment of Industrial Automation Technologies Departments in Anatolian Technical High Schools" was successfully carried out jointly by the General Directorate of Vocational and Technical Education (hereinafter referred to as "GDVTE") of MoNE and JICA from 2001 to 2006 with the aims of establishing industrial automation technology (IAT) departments at international standards in Izmir Mazhar Zorlu and Konya Adil Karaağaç Anatolian Technical High Schools, training the teachers of this department in Japan and developing training and education programs for IAT.

Following the successful implementation of the above-mentioned project, which produced outputs in line with the sectoral demands, it was planned in 2005 to newly establish IAT departments in 20 schools. The Teacher Training Centre (hereinafter referred to as "TTC") was established at Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School in 2006 with the aim of developing the teaching staff who will work at the IAT departments of the 20 schools.

In 2007, GDVTE of MoNE and JICA commenced "The Project on Strengthening the Program of Expanding Industrial Automation Technologies Department" (SPREAD). This project established the Teacher Training System within TTC, and teachers and staff at TTC were trained.

Against such backgrounds, GoT, gaining confidence through these successful initiatives, decided to transfer the knowledge and experiences acquired through the above-mentioned projects to vocational and technical teachers of industrial automation technology (including electric-electronics, mechatronics, mechanics, ICT) fields in the countries in Central Asia and Middle East Region by means of training to be provided at TTC of Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School. GoT requested the Government of Japan for assistance and also requested support from TIKA for project implementation. Responding to this request, JICA dispatched the detailed planning survey team to Turkey and discussed and agreed on the framework for this technical cooperation project with the Turkish side.

II. OUTLINE OF THE PROJECT

1. Project Framework

The details of the Project are described in the logical framework (Project Design Matrix: PDM) (Attachment 1-1) and the tentative Plan of Operation (PO) (Attachment 1-2).

2. Implementation Structure

The Project Implementation Structure Plan is given in the Attachment 1-3. The roles and responsibilities of relevant organizations are as follows:

(1) MoNE

(a) Director General, General Directorate of Technical and Vocational Education, MoNE, as the Project Director, will bear overall responsibility of the Project.
(b) Head of Department, General Directorate of Technical and Vocational Education, MoNE, as the Deputy Project Director, will bear responsibility of the management of the Project.
(c) MoNE will bear overall responsibilities to coordinate among all stakeholders.
(d) MoNE will coordinate with relevant Turkish Embassies in the target countries whenever the necessity arises.

(2) Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School

(a) School Principal of the Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School, as the Project Manager, will bear administrative and technical responsibility for the implementation of project activities.
(b) TTC will develop implementation plans of the training programs for the target countries.
(c) TTC will lead the implementation of the training programs within the Project framework

(3) TIKA

(a) TIKA will support the implementation of the Project through making necessary arrangement, coordination, information gathering, communication, and by also playing a role as a focal point for follow-up activities with relevant personnel and organizations within the target countries.

(4) JICA Experts

(a) The JICA experts will give necessary technical guidance, advice and recommendations to MoNE, TTC, and TIKA on any matters pertaining to the implementation of the Project.

(5) Joint Coordinating Committee

Joint Coordinating Committee (hereinafter referred to as "JCC") will be established in order to facilitate inter-organizational coordination. JCC will be held at least once a year and whenever deems it necessary. JCC will approve the annual work plan, review overall progress, conduct monitoring and evaluation of the Project, and exchange opinions on major issues that arise during the implementation of the Project. A list of proposed members of JCC is shown in Attachment I-4.

3. Project Site and Beneficiaries

The Project site will be TTC of Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School. The direct beneficiaries will be the technical and vocational school teachers teaching industrial automation technology and related subjects in the target countries.

4. Duration

The duration of the Project will be three (3) years starting from the first day of the dispatch of Japanese expert(s) to Turkey.

5. Reports

MoNE and JICA experts will jointly prepare the following reports in English.

(1) Progress Report on semiannual basis until the project completion.
(2) Project completion Report at the time of project completion

6. Environmental and Social Considerations

MoNE agreed to abide by "JICA Guidelines for Environmental and Social Considerations" in order to ensure that appropriate considerations will be made for environmental and social impacts of the Project.

III. UNDERTAKINGS OF MoNE

1. MoNE will take necessary measures to:

(1) ensure that the technologies and knowledge acquired by the Turkish nationals as a result of Japanese technical cooperation contributes to the economic and social development of Turkey as well as the target countries of the Project, and that the knowledge and experience acquired by the personnel of Turkey from technical training as well as the equipment provided by JICA will be utilized effectively in the implementation of the Project;
(2) grant privileges, exemptions and benefits to the JICA experts and their families, which are no less favorable than those granted to experts and members of the missions and their families of third countries or international organizations performing similar missions in Turkey;
(3) provide security-related information as well as measures to ensure the safety of the JICA experts;
(4) permit the JICA experts to enter, leave and sojourn in Turkey for the duration of their assignments therein and exempt them from foreign registration requirements and consular fees;
(5) exempt the JICA experts from taxes and any other charges on the equipment, machinery and other material necessary for the implementation of the Project;
(6) exempt the JICA experts from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to them and/or remitted to them from abroad for their services in connection with the implementation of the Project; and
(7) meet taxes and any other charges on the equipment, machinery and other material, necessary for the implementation of the Project.

2. MoNE will bear claims, if any arise, against the JICA experts resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Project, except when such claims arise from gross negligence or willful misconduct on the part of the JICA experts.

IV. EVALUATION

JICA, MoNE, and TIKA will jointly conduct the following evaluations and reviews.

1. Terminal evaluation during the last six (6) months of the cooperation term

JICA may conduct the following evaluations and surveys to mainly verify the sustainability and impact of the Project and draw lessons. In such cases MoNE, and TIKA are required to provide the necessary support.

2. Ex-post evaluation three (3) years after the project completion, in principle
3. Follow-up surveys on necessity basis

V. PROMOTION OF PUBLIC SUPPORT

For the purpose of promoting support for the Project, MoNE and TIKA will take appropriate measures to make the Project widely known to the people of Turkey.

VI. MUTUAL CONSULTATION

JICA, MoNE, and TIKA will consult each other whenever any major issues arise in the course of Project implementation.

VII. AMENDMENTS

The Record of Discussion may be amended by the minutes of meetings among JICA, MoNE and TIKA. The minutes of meetings will be signed by authorized persons of all parties who may be different from the signer of the Record of Discussions.

Attachment 1-1 Project Design Matrix
Attachment 1-2 Tentative Plan of Operation
Attachment 1-3 Project Implementing Structure Plan
Attachment 1-4 List of Proposed Members of Joint Coordination Committee

Annex 1

Attachment 1-1

Project Design Matrix (PDM)

PROJECT TITLE: The Industrial Automation Technology (IAT) Extension Project for Central Asian / Middle East Countries DURATION: Year 2012 – 2015 (3 years)

IMPLEMENTING AGENCY: Ministry of National Education (MoNE) COLLABORATING AGENCY: Turkish Cooperation and Coordination Agency (TIKA)

PROJECT SITE: Teachers Training Center (TTC) of Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School

TARGET COUNTRIES: 1) Country Focused Training: Azerbaijan, Kazakhstan, Pakistan and Uzbekistan; and 2) Group Training: Afghanistan, Kyrgyzstan, Palestine, Tajikistan and Turkmenistan

TARGET GROUP: Teachers teaching IAT and related subjects in technical and vocational schools in target countries Version 0.1 (2011.11.18)

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Super Goal IAT human resources are developed in target countries.			
Overall Goal Technical education and vocational training capacity on IAT of target countries is enhanced.	*Country specific targets to be set within six months of project commencement.*		
Project Purpose Technical education and vocational training capacity of teachers in IAT in target countries is enhanced.	*Country specific targets to be set within six months of project commencement. (Below are examples)* *Country A:* *1) At least XX teachers become capable of teaching basic IAT subjects.* *2) Basic level IAT course text book is developed.* *Country B:* *1) At least XX teachers become capable of updating text books on IAT.* *2) Curriculum on IAT education is improved.*	*Evaluation of training/lessons conducted by ex-participants* *Text book assessment by Turkish/Japanese experts* *Text book assessment by Turkish/Japanese experts* *Curriculum assessment by Turkish/Japanese experts*	Target countries utilize training achievements to enhance capacity of teachers and institutions engaged with IAT.
Outputs 1. Training for target group is appropriately planned.	1) Appropriate training targets are set for each country focused training country 2) Appropriate training targets are set for group training 3) Appropriate training plans are prepared for each of four country-focused training group countries and for group training	Agreement document prepared with each country Course target Training plans prepared and training evaluation (questionnaire to participants)	Ex-participants utilize/share training achievements in home country.
2. Training for target group is effectively provided.	1) At least XX % of participants in country focused training sufficiently understands content of training. 2) At least XX % of participants in group training sufficiently understands content of training.	Training evaluation (test to participants) Training evaluation (test to participants)	
3. Follow-up system is established.	1) Web-based information system is sufficiently maintained. 2) Training impact is properly assessed in second and third year for in country focused training. 3) Training impact evaluation is properly conducted.	Training impact evaluation (questionnaire to ex-participants) Feedback collected from participants at beginning of training in second and third year. Training impact evaluation report	

Annex 1

Narrative Summary	Inputs		Important Assumptions
Activities 1-1 Identify detailed training needs of each country. 1-2 Select target institution(s) in each country. 1-3 Establish specific project targets for each country. 1-4 Develop/ improve training curriculum. 1-5 Prepare/ improve training material. 1-6 Determine training schedule. 2-1 Select participants. 2-2 Arrange logistics 2-3 Implement training. 2-4 Evaluate training. 3-1 Develop follow-up plan. 3-2 Develop web-based information sharing system. 3-3 Conduct follow-up. 3-4 Evaluate training impact.	<u>Turkey Side</u> 1) Personnel ➢ Project Director (Director General, General Directorate of Technical and Vocational Education) ➢ Deputy Project Director (Head of Department, General Directorate of Technical and Vocational Education) ➢ Project Manager (Principal, Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School) ➢ Teachers of TTC ➢ Focal point of TIKA 2) Facilities ➢ Office space for experts at TTC ➢ Training facilities at TTC 3) Available data and information related to project 4) Recurrent costs ➢ Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and other materials owned by Turkey side ➢ Utility and other basic expenses to run project 5) Following training cost: ➢ Interpretation, Translation, Meeting expenses, Training material, Document printing, Excursions etc 6) Travel cost of joint needs survey mission to Azerbaijan, Kazakhstan, Pakistan and Uzbekistan for Turkish side	<u>Japanese Side</u> 1) Experts ➢ Chief Advisor/ Training Management ➢ Coordinator/ Curriculum Development ➢ Other fields 2) Following training cost: ➢ Air fare, Transportation, Per-diem, Accommodation, Insurance etc. 3) Travel cost of joint needs survey mission to Azerbaijan, Kazakhstan, Pakistan and Uzbekistan for Japanese side	**Preconditions** Target countries participate in project.

Annex 1

Attachment 1-2

Tentative Plan of Operation (PO)

The Industrial Automation Technology (IAT) Extension Project for Central Asian /Middle East Countries

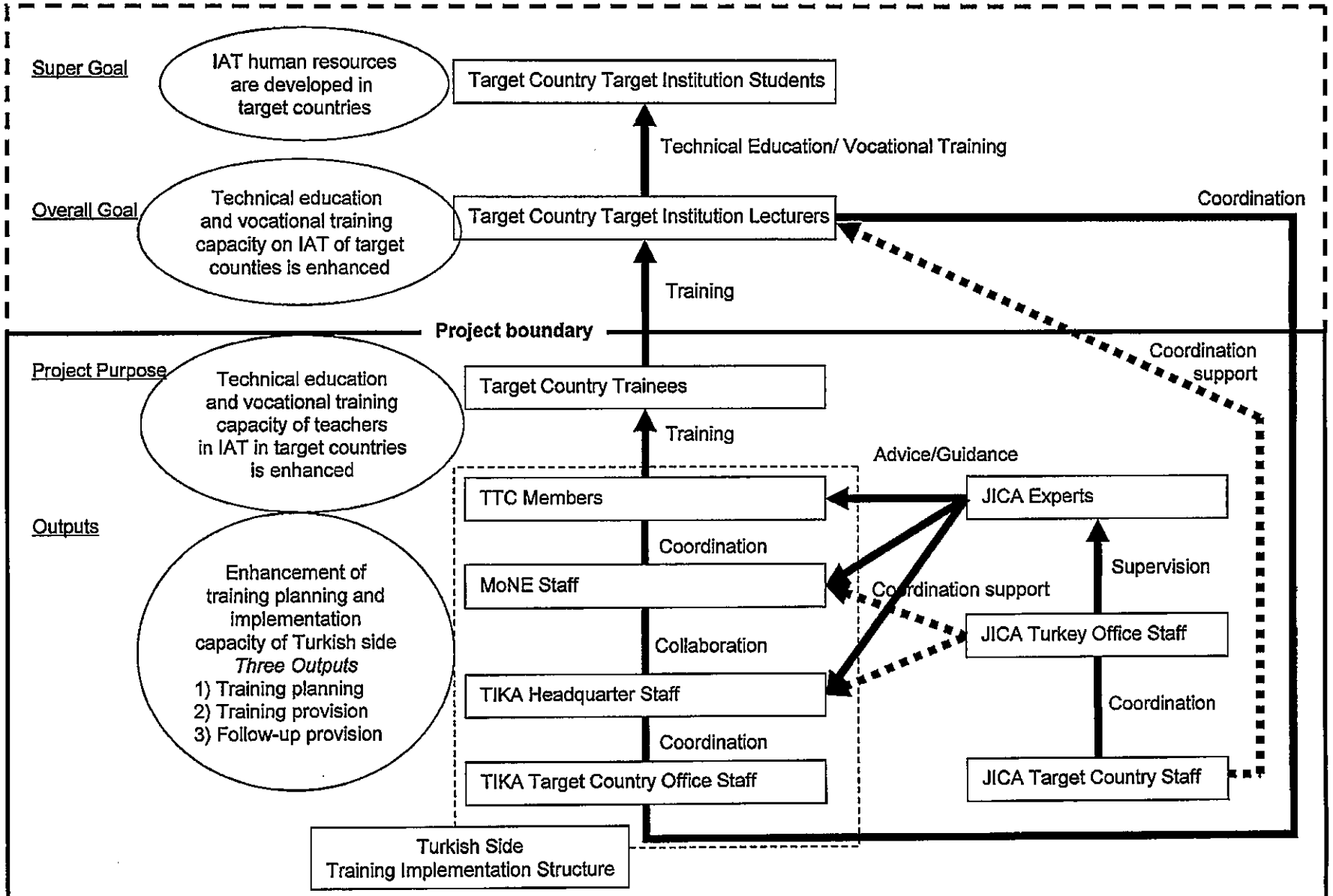
Version 0.1 2011.11.18

Activities	1st Year				2nd Year				3rd Year				*Responsible Person*
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Output 1: Training for target group is appropriately planned.													
1-1 Identify detailed training needs of each country.													
1-1-1 Conduct desk-top needs assessment for all target countries.													
1-1-2 Study current situation in Azerbaijan, Kazakhstan, Pakistan and Uzbekistan and consult stakeholders on training needs.													
1-2 Select target institution(s) in each country.													
1-3 Establish specific project targets for each country.													
1-4 Develop/ improve training curriculum.													
1-5 Prepare/ improve training material.													
1-6 Determine training schedule.													
Output 2: Training for target group is effectively provided.													
2-1 Select participants.													
2-1-1 Select participants of Azerbaijan, Kazakhstan, Pakistan and Uzbekistan.													
2-1-2 Select participants for group training.													
2-2 Arrange logistics.													
2-3 Implement training.													
2-3-1 Conduct training for Azerbaijan.													
2-3-2 Conduct training for Kazakhstan.													
2-3-3 Conduct training for Pakistan.													
2-3-4 Conduct training for Uzbekistan.													
2-3-5 Conduct group training.													
2-4 Evaluate training.													
Output 3: Follow-up system is established.													
3-1 Develop follow-up plan.													
3-2 Develop web-based information sharing system.													
3-3 Conduct follow-up.													
3-4 Evaluate training impact.													
Determine PDM indicators.													
Terminal Evaluation													

Annex 1

Attachment 1-3

Project Implementation Structure Plan



Annex 1

Attachment 1-4

List of Proposed Members of the Joint Coordinating Committee

1. Chairperson: Director General, General Directorate of Technical and Vocational Education, MoNE

2. Members of the Turkish side:
   a. Deputy Director General, General Directorate of Technical and Vocational Education, MoNE
   b. Head of Department, General Directorate of Technical and Vocational Education, MoNE
   c. School Principal, Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School
   d. Chief of IAT Department, Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School (TTC)
   e. Representatives of TIKA

3. Members of the Japanese side:
   a. JICA Experts
   b. Representative of JICA Turkey Office
   c. Other personnel concerned, to be nominated by JICA as needed

NOTE: Official(s) of the Embassy of Japan and other individuals deemed necessary by the Chairperson may attend the JCC as observe(s)

Annex 1

Appendix 2

MAIN POINTS DISCUSSED

1. Detailed Roles and Responsibilities / Inputs of Stakeholders

The detailed roles and responsibilities as well as the inputs to be provided by each concerned party within the project implementation structure was agreed as shown in Attachment 2-1.

2. Cost sharing of the training courses

The provisional distribution of expenditure items for each training courses among MoNE, JICA and TIKA is shown in Attachment 2-2. The actual distribution of costs will be discussed and finalized among the three parties according to the detailed estimation prior to the commencement of each course. The actual cost sharing rate among the three parties are subject to change for each course depending on the actual costs required and discussion results. Shared portion of JICA shall not exceed seventy percent (70%) of the total amount.

Attachment 2-1 Detailed Roles and Responsibilities / Inputs of Stakeholders
Attachment 2-2 Provisional Distribution of Costs for Training

Detailed Roles and Responsibilities

Organization	Roles and Responsibilities / Inputs
Izmir Mazhar Zorlu School Teacher Training Center	*Roles and Responsibilities* ▪ Develop implementation plan of the Trainings within the project framework ▪ Lead the implementation of the Trainings – Analyses of target, curriculums, training contents, materials, etc. – Development of course contents and materials – Organization of logistical arrangements – Provision of lectures and site visits – Compilation of implementation reports – Implementation of monitoring of the ex-participants' activities – Provision of follow-up support to the ex-participants – Conduct initial selection of training candidates *Inputs* ▪ Principal of Izmir Mazhar Zorlu Anatolian Technical and Industrial Vocational High School to be the "Project Manager" who will bear administrative and technical responsibility for the implementation of the Project. ▪ Services of counterpart personnel and administrative personnel ▪ Lecturers / instructors for the training ▪ Suitable office space for JICA Experts with necessary equipment ▪ Supply and/or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary owned by Turkey side. ▪ Utility and other basic expenses to run the Project. ▪ Available data and information related to the Project ▪ Information as well as support in obtaining medical service for the JICA Experts
Ministry of National Education	*Roles and Responsibilities* ▪ Take overall responsibility of the management and implementation of the Project ▪ Overall coordination among all stakeholders ▪ Coordinate with relevant Turkish Embassies in the target countries whenever the necessity arises ▪ Supervise the selection process of candidates for training and confirm the selection *Inputs* ▪ Director General of General Directorate of Vocational and Technical Education to be the "Project Director" who will bear overall responsibility of the Project. ▪ Head of Department of General Directorate of Vocational and Technical Education to be the "Deputy Project Director" who will bear responsibility of the management of the Project. ▪ Services of counterpart personnel ▪ Allocation of running expenses within MoNE, necessary for the Project ▪ Budget for Training Implementation Expenses (Meeting Expenses, Document Printing, Other Expenses etc.)

TIKA Headquarters	*Roles and Responsibilities* ▪ Coordination with MoNE, TTC, JICA, and TIKA Program Coordination Offices (PCOs) ▪ Support the implementation of the Trainings – Developing GI – Compiling and providing country information to TTC – Provision of feedbacks to TTC according to gathered information from TIKA PCOs regarding general information of country situation, feedbacks from participants, and potential training needs of the Target countries – Coordinate and support logistical arrangement for selection procedures of candidates – Participate in selection of candidates. – Supporting of agreed portion of logistical arrangements *Inputs* ▪ Budget for Training Implementation Expenses (Translation, Excursion Expenses, Expendable Supplies, Consumption Material etc.) ▪ Expenses of Turkish members to participate in joint needs survey mission to country focused training target countries.
TIKA Offices in Target Countries	*Roles and Responsibilities* ▪ Coordinate with the target countries for the implementation of the Trainings – Coordination with the target organizations for proper selection of nominees – Distribution of GI and gathering of application forms – Notifying the selection results to the respective governments – Provide support to the participants for departure and giving orientation – Gather general information of country situation, feedbacks from participants, and potential training needs of the Target countries – Become focal point for the follow-up activities toward the ex-participants.
JICA Experts	*Roles and Responsibilities* ▪ Provide overall support to the project through the provision of facilitation and technical advice to MoNE, TTC, and TIKA ▪ Support the implantation of the Trainings by giving technical lectures in the agreed field ▪ Participate in selection of candidates for trainings
JICA Turkey Office	*Roles and Responsibilities* ▪ Coordinate with MoNE, TTC, TIKA, JICA Experts and JICA Offices *Inputs* ▪ Dispatch of the Experts (Chief Advisor/ Training Management, Project Coordinator / Curriculum Development, Other fields) ▪ Budget for Training Invitation Expenses (Air Fare, Transportation, Per-diem, Accommodation, Health Insurance etc.) ▪ Expenses of JICA Experts to participate in joint needs survey mission to country focused training target countries.
JICA Offices in Target Countries	*Roles and Responsibilities* ▪ Support coordination with target countries whenever necessary

Annex 1

Attachment 2-2

Provisional Distribution of Costs for Training Courses

ITEM OF EXPENSE	BREAKDOWN	JICA	MoNE	TIKA	TOTAL
I. Invitation Expenses					
1. Air Fare	International Flights: X TL x X per.	O			
2. Transportation	X TL x X times (from /to airport)	O			
3. Per-diem	X TL x X per. x Xdays	O			
4. Accommodation	Izmir: X TL x X per. x X days	O			
5. Health Insurance	X TL x X per.	O			
Sub Total I					
II. Training Expenses					
1. Translation Expenses	Interpreter X TL x X per. (Russian.-Turkish Sim. & Cons. Trans.) x X days			O	
	Accommodation: X TL x X per. x X days			O	
	Transportation: X TL x X per.			O	
	Translation equipment Translation equipment rent: X TL x X days			O	
	Written Translation			O	
2. Excursion Expenses	Midibus for X days (for city transfers and inter-city transportations)			O	
	Social Activities: X TL x X pers			O	
3. Expendable Supplies	Writing tools, paper, briefcase, floppy disks, portfolio, banner, copy etc.			O	
4. Consumption Material	Training Kit etc.			O	
5. Meeting Expenses	Opening ceremony = X TL x X pers.		O		
	Closing reception = X TL x X pers.		O		
6. Printing	Publications, Invitation cards, textbooks, certificates, badges, GI, program, etc.		O		
7. Others	Communication fee		O		
	Miscellaneous				
Sub Total II					
Grand Total					
Cost Sharing Rate (%)					

Annex 2

Proposed Grouping of Target Countries

Group	Country	Training Strategy
Country Focused Target	**Pakistan, Uzbekistan, Azerbaijan, Kazakhstan (4 countries)**	• **Corresponding to individual country needs (Country Focused Training for each Country)** • **Progress of training level for each year** • **Same trainees for every year**
Group Target	**Kyrgyzstan, Turkmenistan, Tajikistan, Afghanistan, Palestine (5 Countries)**	• **Corresponding to common needs (Group Training)** • **Introductory Training for IAT with basic techniques** • **Open recruitment for each year**

Annex 3

Proposed Training Implementation Plan

Group	No. of Countries	Course Type	No. of Training per year	No. of Participants Per year	Duration per course
Country Focused Target	4 Countries (Pakistan, Uzbekistan, Kazakhstan, Azerbaijan)	Country Focused Training	4 Courses (Separate course for each country)	10 participants X 4 Courses = 40 participants	3 weeks
Group Target	5 Countries (Afghanistan, Kyrgyzstan, Palestine, Tajikistan, Turkmenistan)	Group Training	2 Courses	2 Participants X 5 Countries X 2 Course = 20 Participants	4 weeks

添付資料３　PDM (Ver.0) 和文仮訳

プロジェクト・デザイン・マトリクス（PDM）（仮訳）

プロジェクト名：中央アジア・中東向け自動制御技術普及プロジェクト　　実施機関：国民教育省（MoNE）

プロジェクト期間：2012 年～2015 年（3 年間）　　協力機関：トルコ協力調整庁（TIKA）

プロジェクトサイト： アナトリア職業高校イズミール校教員研修センター（TTC）

対象国 1）国別研修：アゼルバイジャン、カザフスタン、パキスタン、ウズベキスタン　　2）合同研修：アフガニスタン、キルギスタン、パレスチナ、タジキスタン、トルクメニスタン

ターゲットグループ：自動制御技術（IAT）と関連科目を教える対象国技術・職業学校教員　　Version 0.1（2011.11.18）

プロジェクト要約	指標	入手手段	外部条件
スパーゴール 対象国で IAT に関する人材が育成される。			
上位目標 対象国の IAT に関する技術教育・職業訓練能力が向上する。	※プロジェクト開始 6 カ月以内に、対象国ごとに指標を設定する。		
プロジェクト目標 対象国教員の IAT に関する技術教育・職業訓練能力が向上する。	※プロジェクト開始 6 カ月以内に、対象国ごとに指標を設定する（以下は例）。 A 国 1）少なくとも XX 人の教員が基礎的な IAT に関する科目を教えられるようになる。 2）基礎レベル IAT コース教科書が作成される。 B 国 1）少なくとも XX 人の教員が IAT に関する教科書を改訂できるようになる。 2）IAT 教育のカリキュラムが改善される。	帰国研修員が実施した研修・授業の評価 トルコ・日本人専門家による教科書の評価 トルコ・日本人専門家による教科書の評価 トルコ・日本人専門家によるカリキュラムの評価	対象国が IAT に関係する教員と機関の能力を向上するために研修成果を活用する。
成果 1. ターゲットグループの研修が適切に計画される。	1）各国別研修対象国について、適切な研修目標が設定される。 2）合同研修について、適切な研修目標が設定される。 3）4 つの国別研修対象国と合同研修について、適切な研修計画が作成される。	各国との合意文書 コース目標 作成された研修計画と研修評価（研修員アンケート）	帰国研修員が研修成果を本国で活用・共有する。
2. ターゲットグループに研修が効果的に提供される。	1）国別研修の研修員の少なくとも XX%が研修内容を十分理解する。 2）合同研修の研修員の少なくとも XX%が研修内容を十分理解する。	研修評価（研修員のテスト） 研修評価（研修員のテスト）	
3. フォローアップシステムが構築される。	1）ウェッブベースの情報共有システムが適切に管理される。 2）国別研修の 2 年目と 3 年目に、研修インパクトが適切に評価される。 3）研修インパクト評価が適切に実行される。	研修インパクト評価（帰国研修員アンケート） 2 年目と 3 年目の研修冒頭に研修員から集約するフィードバック 研修インパクト評価報告書	

プロジェクト要約	投入		外部条件
活動 1-1 各国の詳細研修ニーズを特定する。 1-2 各国のプロジェクト対象機関を選定する。 1-3 各国について、プロジェクトの具体的な目標を設定する。 1-4 研修カリキュラムを作成・改善する。 1-5 研修教材を準備・改善する。 1-6 研修スケジュールを作成する。 2-1 研修員を選定する。 2-2 受け入れ・運営準備を行う。 2-3 研修を実施する。 2-4 研修を評価する。 3-1 フォローアップ計画を作成する。 3-2 ウェッブベースの情報共有システムを開発する。 3-3 フォローアップを行う。 3-4 研修インパクトを評価する。	**トルコ側** 1) 人員配置 ➢ プロジェクトダイレクター（MoNE 技術・職業教育総局長） ➢ 副プロジェクトダイレクター（MoNE 技術・職業教育総局部長） ➢ プロジェクトマネージャー（アナトリア職業高校イズミール校校長） ➢ TTC 教員 ➢ TIKA フォーカルポイント 2) 施設 ➢ TTC での専門家執務スペース ➢ TTC の研修施設 3) プロジェクトに必要なデータと情報 4) 経常経費 ➢ トルコ側が保有する資機材、器具、車両、工具、予備部品などの供給・取り替え費用 ➢ 光熱・水道費などプロジェクト運営に必要な基礎的経費 5) 以下の研修経費 ➢ 通訳、翻訳、会議、研修教材、印刷、小旅行など 6) アゼルバイジャン、カザフスタン、パキスタン、ウズベキスタンへの合同ニーズ調査のトルコ側参加者費用	**日本側** 1) 専門家 ➢ チーフアドバイザー／研修管理 ➢ 業務調整／カリキュラム作成 ➢ その他の分野 2) 以下の研修経費 ➢ 航空券、空港送迎、宿泊、日当、旅行保険など 3) アゼルバイジャン、カザフスタン、パキスタン、ウズベキスタンへの合同ニーズ調査の日本側参加者費用	**前提条件** 対象国がプロジェクトに参加する。

添付資料４　ローカルコンサルタント基礎情報収集調査結果報告資料

COMPARATIVE STUDY FOR THE
INDUSTRIAL AUTOMATION TECHNOLOGY (IAT)
EXTENSION PROJECT

Interim Evaluation Workshop
26 October 2011

Objectives

- Needs Analysis towards extending the TVET capacity of Turkey in Central Asian and Middle Easter Countries

Teams

- Team 1
  - Azerbaijan
  - Iran
- Team 2
  - Pakistan
  - Turkmenistan
- Team 3
  - Kazakhstan
  - Kyrgyzstan
  - Tajikistan
  - Uzbekistan

Process

- Kick-off Meeting
- Inception
- Coordination
- Country Visits
- Desk research
- Analysis
- Interim Report

Challenges

- Logistical issues
- Coordination
- Information sharing limitations

Project Management

- Standard forms
- Backstopping
- Reporting and Review

Workshop

- Country Surveys
- Q&A
- Wrap-up

Azerbaijan
Country Survey

Interim Evaluation Workshop
26October 2011

Mission

- Date: 28th September 2011 to 30th September 2011
- City/Cities: Baku
- Contacts visited: TİKA Office in Baku, Dr. Salih Polat TIKA Coordinator, Embassy of Turkish Republic of Turkey in Baku,Mr. Gazi Bilgin, Office of the Commercial Counsellor, Chief of Commercial Counsellor,Mr. Mustafa Gür ,Labour and Social Security Counsellor,TÜSİAB Turkish Industrialist and Businessmen Association in Baku, Mr. Yasin Göral General Secretary, Ministry of Labour and Social Security, Dr. Sefa Aliyev Director, Baku Province Director, National Confederation of Entrepreneurs (Employer') Organization of Azerbaijan Republic, Mr. Mohammadali Efendiyev Secretary General, The Ministry of Education of Azerbaijan Republic, Mr. Namıg Mammadov Technical-Vocational Education Department Head of Department.

Socio-economic Background

- Population: 8,372,373 (July 2011 est.)
- Population growth rate: 0.846%
- GDP: $90.79 billion
- GNI per capita:$5,080
- CPI (inflation rate): 5.7%
- unemployment rate (% of labor force): 0.9
- internet users (per 100 inhabitants): 28

Socio-economic Background

- major trading partners of import: Turkey 17.7%, Russia 14.5%, Germany 9.9%, China 9.6%, UK 7.2%, Ukraine 7% (2010)
- major trading partners of export: Italy 26.8%, US 8.4%, Germany 7.1%, France 6.7%, Czech Republic 4.9%, Russia 4.4% (2010)
- education expenditure (% of GDP):2.8

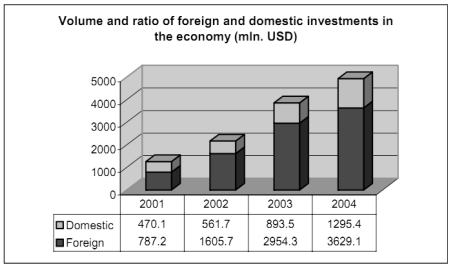
Industrial Sector Analysis

- Mainly petro-chemical and mining industry.
- Products: petroleum and natural gas, petroleum products, oilfield equipment; steel, iron ore; cement; chemicals and petrochemicals; textiles
- 60% of GDP generated by industry.
- TVET mainly focuses on petro-chemical industry needs

Foreign Investment

- Foreign investment is increasing in a steady pace

Figure 2: Foreign Investments



Foreign Investment

- Areas of foreign investments:

Sector structure of investments (%), 2004

Sector	%
Industry	80.3
a) Oil and gas production	76.4
b) Processing industry	3
c) Electricity and water supply sectors	1.2
Agriculture	0.7
Construction	0.2
Trade and services	1.1
Transport	6.4
Communication	2.1
Construction of dwellings	6.2
Other sectors	3

Labour Market

- Unemployment: %0.9
- Ever - Increasing demand for new workers especially in the petro-chemical industry.
- Unregistered employment is a big issue
- Qualified workforce is scarce, especially in the executive positions.
- Employment opportunities are mainly in Baku.
- Using foreign workforce is restricted. (Only 3 months of work permit is allowed)

Skills needs in Industrial Sector

- Government recently recognized the need for improving the TVET infrastructure due to labour shortages in industry.
- Latest 5 year plan focuses on this fact and suggests an "educational reform", to enhance the industry-related skills pool of the population.

Education Management System

- General education:
  - Responsible body:Ministry of Education
  - Primary (years 1 to 4) - 1st level;*
  - Basic (years 5 to 9) - 2nd level (certificate of basic education);*
  - Secondary - (years 10 to 11) - 3rd level (certificate of secondary general education).*

* Compulsory

Technical and Vocational Education System

- Enrollment: after grade school
- Technical occupational education (1 to 3 years);
- Specialized secondary education (2 to 3 years);
- Specialized higher education (4 to 5 years, after general secondary education or completion of 3 years of technical education).
- Around 200 vocational schools in the country.
- Area of focus: light industry

Linkages between Labor Market and TVET

- Vocational schools and institutions offer guidance on career planning and recruitment. On the other hand no data is available for its effectiveness as of yet.
- Since there is always shortage of workforce in the country, graduates have no significant trouble landing jobs in the industry.

TVET Curriculum Development

- Curriculum development and planning is under the responsibility of Ministry of National Education.
- Course curricula are based on very old practices and method of teaching.
- No e-learning.

Technical and Vocational Education Institutions and Organizations

- The Ministry of Education is responsible for planning, research, and development as well as for the administration and management of the Technical and Vocational Schools system.
- The Ministry of Education exerts control over the functioning of the Technical and Vocational Schools, while the Ministry of Finance is engaged in controlling the budget: i.e. funding and expenditure.
- There are no grounds to verify any social partnership in the development and activities of the vocational institutions. The Ministry of Education states that **no social groups and social partners** are involved in the TVC system decision-making.

International Donors

- Organizations such as UNESCO, UNICEF, UNEVOC, ISESCO, European Foundation for Education, Council of Europe and European Union, are among the international supporters of TVET in Azerbaijan. Below are the some of the projects that these organizations have been implementing in affiliation with the Ministry of National Education of Azerbaijan:

- The CIS and USA twin-schools project;
- Joint project of the European Education Foundation and Ministry of Education in the direction of vocational education development in Azerbaijan;
- Joint project of the Britain Council and Ministry of Education for the improvement methods of English language teaching in Azerbaijan education establishments;
- Regional project with the European Council on the theme of Intercultural dialogue through the education;
- Joint regional project with the European Council on the theme of "Education on the democratic citizenship";
- Joint project of the Council of Europe and Ministry of Education for the educational policy of national minorities;
- Joint project with the ACCELS (USA)
- Partnership program with the IREX Company (USA)
- Joint program with the DAAD - German Academic Exchange Service
- Joint project of the Ministry of Education, UNICEF and "World Vision" organization for the integrative education of children in need of special care;
- Joint project with the UNESKO for the development of vocational education.
- List of projects is gathered from http://www.edu.gov.az/view.php?lang=en&menu=256

Conclusions

- Finding qualified workforce is a challange.
- Ever-present labour-shortages.
- Recent government interventions to education system has yet to produce any results.
- No cooperations with NGO's while defining the TVET policies.
- Legacy methods and techniques have still being used in TVET.

Recommendations

- Azerbaijan is open to any kind of cooperation with Turkey regarding TVET activities.
- Construction, service, textile and food processing are among the main sectors that Turkey can contribute instantly in this regard.
- National qualifications framework can be founded to back TVET.
- Limitations on foreign workforce should be decreased.

Islamic Republic of Iran Country Survey

Interim Evaluation Workshop
26 October 2011

Mission

- **Date**: 30th September 2011 to 04th October 2011
- **City/Cities visited**: Tehran
- **Contacts visited**: JICA Office in İran Nayereh Mashayekhi (Program Officer), Daijiro Kato (Project Formulation Advisor), Ministry Of Applied Science And Technology, Dr. Mohammd Hossain Mosazadeh (Technology Manager),Eng. Sirous Katani (Assistant Technology Manager), Turkish Embassy, Mehmet Serkan Burali (Trade Counsellor),Mehmet Akif Koç (Third Secretary).

Socio-economic Background

- Population: 77 270 000 (2011 estimates)
- Population growth rate: 1.2 %
- GDP: $357.2 billion (2010 est.)
- GNI per capita: *4,530$*
- CPI (inflation rate): 9.5% (2010)
- Unemployment rate (% of labor force): 14.6% (2010)
- Internet users (per 100 inhabitants): 50
- Major trading partners of exports; China 16.2%, India 12.6%, Japan 9.9%, Turkey 6.8%, South Korea 5.7%, Italy 5.3% (2010)

Socio-economic Background

- Major trading partners of import: China 17.4%, UAE 16.7%, Germany 7.6%, South Korea 6.3%, Russia 5.7%, Turkey 4.8%, Italy 4.2% (2010)
- Education expenditure (% of GDP): 4.7
- Geographic area: total: 1,648,195 sq km land: 1,531,595 sq km, water: 116,600 sq km

Industrial Sector Analysis

- Oil and natural gas sectors dominate the overall industrial sector. (80% of the total exports)
- Products:
  - **Industry**: petroleum, petrochemicals, fertilizers, caustic soda, textiles, cement and other construction materials, food processing (particularly sugar refining and vegetable oil production), ferrous and non-ferrous metal fabrication, armaments
  - **Agriculture**: wheat, rice, other grains, sugar beets, sugar cane, fruits, nuts, cotton; dairy products, wool; caviar

Industrial Sector Analysis

- Target customers: International and national petrolium products buyers,
- Main industrial sectors and those relating to TVET:
  - Petroleum
  - Construction
  - Mining and Minerals

Foreign Investment

- Iran ranked sixth globally in 2010 in attracting foreign investments.
- most active investors have been German, Norwegian, British, French, Japanese, Russian, South Korean, Swedish, and Swiss companies.
- Government aims to invest$20 billion a year in private and foreign investment, in part to boost oil refining capacity

Foreign Investment - Investments by Continent

Continent of origin	Leading countries investing in Iran (1992-2008)	Number of projects	Total amount invested
Asia	United Arab Emirates (UAE), Singapore, Indonesia and Oman	190	$11.6 billion
Europe	Germany, the Netherlands, Spain, UK, Turkey, Italy and France (20 countries in total)	253	$10.9 billion
Americas	Canada, Panama, the USA and Jamaica	7	$1.4 billion
Africa	Mauritius, Liberia and South Africa	N/A	$8 billion
Australia	Australia	1	$682 million

Labour Market

- Labour force - by occupation: Agriculture: 23%, Industry: 32%, Services: 45%
- Unskilled labour costs about $12 per day, which is higher than labour costs in high-export countries of China and India.
- So far, Iran's economy has been dominated by the capital intensive public sector (53 percent of investments) with the private sector playing a peripheral role in the economy.
- Despite improvements, TVET system still unable to provide enough qualified workforce for industry

Skills needs in Industrial Sector

- Iran is transitioning to market economy from planned economy
- Main occupational areas in oil and gas sector:
  - Exploration and production
  - Refining
  - Marketing and Distribution
  - Research and Development
  - Commercial Services

Education Management System

- Related body: Ministry of Education
- General Structure:
  - Pre-school (1 year cycle, children aged 5)
  - Primary (5 year cycle, children aged 6-10)
  - Middle (Guidance) (3 year cycle, children aged 11-13)
  - Secondary (3 year cycle, students aged 14-17)
  - Pre-university (1 year cycle, students aged 18)

Technical and Vocational Education System

- Related Body: Technical and Vocational Training Organisation (TVTO) under the Ministry of Labour and Social Affairs
- The principal awards offered by the TVTO are as follows:
  - Second Degree Technician Certificate – Semi skilled worker level
  - First Degree Technician Certificate – Skilled Worker level
  - Higher Diploma (Kardani) – Technician/Supervisor level

Technical and Vocational Education System

- The system is divided into two portions:
  - 1. Technical and Vocational Education (TVE) system (formal)
  - 2. Technical and Vocational Training (TVT) system (adult education oriented)
- TVE is 5 years (3+2)
- TVT is mostly 3-24 month courses on around 100 subjects

Technical and Vocational Education System – Funding

- Public investment in TVET
  - The TVTO is funded directly through government sources.
  - Funds are secure due to government's interest in joining WTO.
  - The funds allocated to TVTO are channelled through the Ministry of Labour and Social Affairs budget.
  - TVTO's programs are free for trainees.
  - TVTO works closely with a number of bilateral and international agencies including JICA, KOICA, World Bank and ILO. It is currently negotiating a large program/loan with the World Bank.
- Civil society support to TVET (e.g. religious institutions, unions, NGOs)
  - Some NGOs in Iran are active in the area of Adult Education. For example, the Society for the protection and assistance of socially disadvantaged individuals (SPASDI) - Bam chapter, they have been providing vocational training opportunities in the city of Bam (post-earthquake). Their chapter in Bam was established in 2003 in order to address immediate emergency and relief needs of earthquake survivors. They soon realized that many women who were widowed as a result of the tragedy were now finding themselves as heads of household but were not able to provide for their families due to lack of marketable skills. SPASDI organized a series of vocational training programs for earthquake survivors in fields such as accounting, computer programming and sewing. From 400 people who registered in these courses in 2006/2007 about 300 of them were women. A high percentage of their participants were able to finish their courses and receive a certificate recognized by the government. Some of their graduates are now fully employed (many self-employed) having put their newly acquired skills into practice. Source: National Report on the Situation of Adult Learning and Education (ALE) National Commission UNESCO - Iran 2008

Technical and Vocational Education System - Teachers

- **TVE Teachers**
- The lack of proper Technical and Vocational teachers is one of the most important obstacles that TVE is facing in Iran. Three sectors are acting to train TVE teachers which are outlined below.
- (a) Non formal TVE teacher training institutions: These institutions are under the supervision of the Ministry of Labour and Social Welfare, the most important one being located in Karadj near Tehran.
- (b) Formal TVE teacher training institutions, under the supervision of Ministries of Education, and Culture and Higher Education which are:
  - (i) Enghelab Eslami Institute of Technology (technical teachers institute)
  - (ii) Babel Teaching Faculty (technical teachers institute).
- (c) UUT's Technical and Vocational Teacher Training School, Union of Universities of Technology: The main objective of UUT's affiliated teacher training

TVET Curriculum Development

- Policy-making, developing curriculum, evaluation, and certification are handled are carried out by the Government (i.e. Ministry of Education and Ministry of Labour)

Technical and Vocational Education Institutions and Organizations

- Ministry of Education (General Education, TVTO Teachers' training and curriculum development)
- Ministry of Labour and Social Affairs (Funding and administering of TVTO)
- Technical and Vocational Training Organisation (TVTO) (implementation of TVET and TVT(informal TVET))

International Donors

- Projects by JICA:
- **Water and Disaster Management**
  - Project on the Establishment of Emergency Response Plan for the First 72 Hours after an Earthquake in the Islamic Republic of Iran
  - Study on Integrated Water Resources Management for Sefidrud River Basin
- **Agricultural and Rural Developmen**
  - Project on Establishment of Participatory Water Management System in Golestan Province
- **Environment Management**
  - Anzali Wetland Ecological Management Project

Conclusions

- **Existing TVET Capacity:**
  - Foundation is present but nearly all infrastructure needs updating and improvement in order to remain competitive with the world especially in the areas of: curriculum development, training of trainers, number of teachers, physical conditions of schools etc.
  - Sufficient number of students but insufficient number of teachers
  - Number of TVET schools is insufficient
  - Highly centralized structure
  - Huge disparity between male and female students
  - National qualifications system is nonexistent.
- Little to no interest shown by Iranian officials from possible Turkish support in TVET due to the fact that Turkey's know how on

Conclusions

- **Existing capacity** of academic and practical teaching including curriculum, basic, compulsory and selective subjects, teaching material and laboratory practice equipment etc. in view of technical education, regional and industrial needs.
- **needs of technical and vocational education** within the country and
- **potential sector or needs** to be covered by the training in **Turkey**

Recommendations

- TVET system should be redesigned based on developed national qualifications.
- Capacity of TVET institutions should be increased.
- Qualifications in Service sector (especially in tourism) in Iran is very backwards compared to the rest of the world. Turkey has superior know how in this regard. Projects aimed at improvement of service sector will likely to have good impact.
- Construction sector is growing in a great pace in Iran. Turkey's know how is relatively better than Iran in this sector, thus projects in this area has a higher chance to see successful

Kazakhstan

Interim Evaluation Workshop
26 October 2011

Mission

- Date: 4-9 October 2011
- City: Astana
- Contacts visited:
  - TIKA
  - KIDI (Kazakhstan Industrial Development Institute)
  - SML-SEMBOL Construction
  - Transport&Communication College-Astana
  - Baskara Management College-Astana
  - Ministry of Education
  - Ministry of Economy and Trade
  - KATIAD (Kazakh-Turk Businessman Association)

Socio-economic Background

- Population: 16.594.000 (2011)
- Population growth rate: 0.7 %
- GDP per capita: 8534,9 US$
- GNI per capita: 7769,4 US$ (2008)
- Inflation rate: 7,8% (2010)
- unemployment rate (% of labor force) :5,4% (in 2011)
- Imports (M. US$):37815,4(2008)
- Exports: (M. US$): 71172 (2008)
- internet users (per 100 inhabitants): 16,2 in 2008
- major trading partners of exports; Italy, Switzerland, China
- major trading partners of import
- Russia, China and Germany
- Education expenditure (% of GDP): 2,8 (2005-2008

Sources: KITIAD Report 2011 Astana , UN Statistics 2008 and Statistics Agency of Kazakhstan 2011

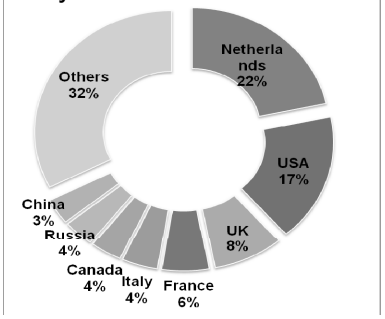
Industrial Sector Analysis

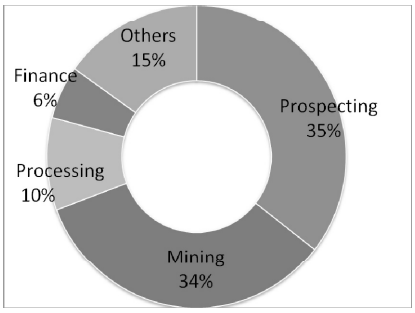
- **Geographic area**: In north and northeast(manufacturing, mining, refining&metallurgy), In south and central(light industry and food processing),in caspian sea (oil&gas)
- **Size, trends and outlook**: Big size plants, centrally managed Soviet system and SMEs. Out dated tech.(except oil and gas)
- **Products**: phosphate fertilizer, rolled metal, cables, wires, tractors, bulldozers, military production, machine building, agro-based products, uranium, tungsten, copper, zinc, silver, oil and gas,textile
- **Target customers**:Russia,China, Central Asian countries,EU and others
- **Leading businesses in the manufacturing industry**: oil&gas, mining, mechanical manufacturing
- **Main industrial sectors and those relating to TVET**: oil&gas, mechanical manufacturing, Telecom, transport

Foreign Investment

By Countries-1993-2010

By sectors-1993-2010





Source: Kaznex Invest, National Export and Investment Agency,

November 9, 2010

Labour Market

- **Numbers of employees :** 8255,6 (August 2011)
- **Labor cost,** : Min. Wage: 115US$/month,
  Average salary/month: 632 US$
- **Labor force by occupation** is as follows in 2010:
  agriculture: 28.2%
  industry: 18.2%
  services: 53.6%
- **Per Capita TVET Expenditure (% of GDP): 0.21**
- **Investment and analysis on labor productivity :** We have not given any info. on the labour productivity
- **Investments in the manufacturing and industrial automation technologies**
  In Kazakhstan, 80% of the Kazakhstani enterprises in manufacturing industry have obsolete technology(generally gained from Russia and Germany from along time ago.) They have a state program to renew the technology up to 2020.
- **Labor force needs in terms of vocational qualifications:**
  Technical staff in the field of construction, welding, metal works, maintenance of machinery, information technologies, building maintenance, electro mechanic and service including restaurant and hotel operating.

Skills needs in Industrial Sector

- **Outline of government economic development plan**

  State Program of Education Development increasing competitiveness of education and development of human capital through modernization of VET system (2011-2020)

- **Government plans for industrial development**

  –Forced Industrial-Innovative Development Program implementation

  2010-2020 with aim of ;

  a) increasing productivity and improving technology through investment

  b) to train 224.6 thousand specialists at TVET schools up to 2015

Education Management System

- **Structure:**

  Transition to 12-year education model will be completed in 2020. There were 7,576 public general education schools functioning across the country, teaching 2.5 mln students .

- **numbers of teaching staff:** n.a
- **structure and figures:**

  – 609.000 people are educating in 894 VET schools.

  (509 Governmental+385 private including 19 special training school)

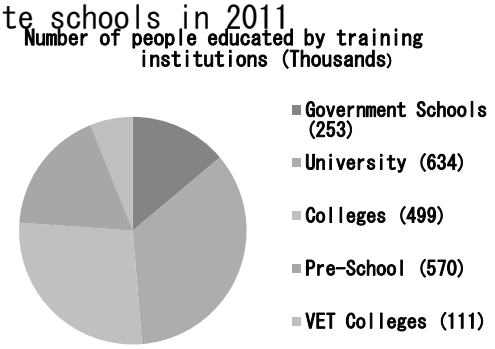
  – 44.000 students in energy, 67.000 students in telecommunication and

  57.000 students are educating in transport field.

Technical and Vocational Education System

- Enrollment and graduation

603.831 students are educating in 894 VET schools which 249.066 students are educating in private schools in 2011



Technical and Vocational Education System

Man-power request by sectors between 2010-2012

Man-power request (thousand people)	2010	2011	2012 (est.)
Total	97.8	100.4	105.4
Industry	31.0	32.3	34.2
Agriculture	11.6	12.3	12.6
Construction	24.6	25.2	26.5
Service	9.1	8.3	8.6
Other Sectors	21.5	22.3	23.5

Source: Modernization Project of Technology in VET Schools, Ministry of Education P:15 Astana

Technical and Vocational Education System

- **Enrollment and graduation**
  603.831 students are educating in 894 VET schools which 249.066 students are educating in private schools in 2011
- **Job placement**
  In general, the job placement rate of VET Graduated students is about 68-72%
- **Training methodology of teaching staff**
  Through in service training + TA projects+ Grants+ Practical training organised by Astana Training Dept.
  Three Training Center established with 700 teacher training capacity each to educate teachers for manufacturing, energy and agriculture industries.
- **No: of teaching staff required:**
  the total demand for personnel for 2010-2014 makes 287 thousand people. 108 thousand people out of it are necessary for the forced industrialization program.

Linkages between Labor Market and TVET

TVE Elements in 2008 by Ownership

Type	Institutions	Teachers	Student Intake in 2008	Total Student Enrollment	Number of Graduates
Schools (lyceums) – Total	324	10,480	49,520	111,180	39,490
Public	298	n.a.	48,290	108,180	38,320
Private	26	n.a.	1,230	3,000	1,160
Colleges – Total	542	28,580	66,680	499,280	118,760
Public	208	n.a.	75,350	237,470	57,080
Private	334	n.a.	91,330	261,810	61,680

World Bank, TVET Modernization Project, June 1, 2010

The student- teacher ratio in VET schools is lower at 10.6 students per teacher than in VET colleges 19.5 students per teacher

Linkages between Labor Market and TVET

daily communication and coordination between industrial sector and TVET facilities

- There is no daily communication and coordination between industrial sector and TVET facilities.
- 3343 teachers are sent to vocational training, 910 people are sent to retraining, 259 teachers are sent professional development courses. KZT 2025.5 mln.(13,7 Mln. USD) is allocated for the realization of this program.
- Over 440 workers of the vocational and technical education were retrained abroad(2009-2011). At the higher education level, Japan, UK and Korea are organising special technical courses for technical staff and engineers.

TVET Curriculum Development

- **Curriculum Design and Development Process**

▪ The visited VET colleges were established a Methodology Center to design and improve their curriculum.

▪ With the implementation of new programme, the number of schools which connecting internet is increased 31% in 2008

▪ Number of VET schools equipped with interactive training facilities and multimedia labs are developed from 1485(2006) to 2532(2008).

▪ Ratio of utlization electronic course boks in the classes is improved from 45%(2006) to 77%(2008)

Technical and Vocational Education Institutions and Organizations

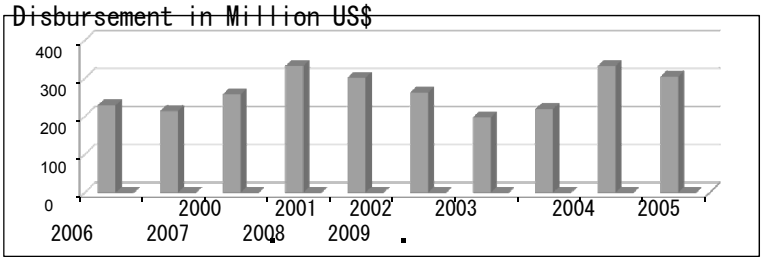
- List of organizations
  - 894 technical and vocational education institutions under the Ministry of Education including 560 colleges, 385 private VET schools
  - Dept. of Special Training (responsible from activities of 19 special training schools)
  - Katev International Training and Culture Foundation (coordination of 31 Kazakh-Turk Secondary Education School which a few of them are VET schools, Suleyman Demirel Universitesi

200
100
0

International Donors

- cooperation projects: (more than 15 projects in last 5 yrs.)

Total Net ODA (Official Development Aids) Disbursement in Million US$



Source: Database of OECD/DAC as of 13.04.2011, www.aidflows.org

Technical and Vocational Education Institutions and Organizations

Kazakhstan- Source of ODA-Top 5 Donors (Average for last 5 years in US$ Million)

USA:	88,61
Turkey:	59.77
Japan:	43.29
Germany:	23.97
EU:	12.80

Source: **www.aidflows.org**. OECD/DAC, 2011

Technical and Vocational Education Institutions and Organizations

- List of donor organizations

EU, GIZ(GTZ), UNDP, UNESCO, ADB (Asian Development Bank), WB(World Bank), GOPA Consulting, ETF(European Training Foundation), USAID , TVET UK, Kazakhstan-japan Center, JICA and TIKA

Conclusions

- **Existing capacity** of;
  - academic and practical teaching including curriculum: **sufficient**
  - teaching material and laboratory practice equipment etc. in view of technical education: **in progress**
  - regional and industrial needs: **will develop up to 2020** in the framework of National Development Strategy 2020
- needs of technical and vocational education: **Priority will be given to TVET between 2012-2020 in national education system. There are deficiency of other technical staff at labour market that the VET schools could be revised their curriculum to train these people in medium term.**
- potential sector or needs to be covered by the training in Turkey: **manufacturing industry, maintenance building, construction, motor-engine maintenance and**

Recommendations

- **Recommendation toward the project formulation :**
  - Industrial Automation Technology is a new concept for manufacturing industry and there is need for training of electric, electro mechanic, electronic technicians for entrepreneurs.
  - The lab facility of pilotVET school has to be modernized. Foreign investors are training their technical staff by in-house training. But, oil&gas industry, energy, light industry and

Recommendations

- **Possible institution(s) or direct target group to be invited for the training in Turkey :**
  - Kazakhstan Ministry of Education,
  - KIDI (Kazakhstan Industry Development Institute)

Krygyzstan

Interim Evaluation Workshop
26 October 2011

Mission

- Date: 13-19 October 2011
- City: Bishkek
- Contacts visited:
  - TIKA
  - Training Counsellor of Turkey
  - TVET Department of Ministry of Education
  - KITIAD (Kyrgyz-Turk Businessman Association)
  - Kyrgyz-Turk Manas Universitesi VET High School
  - Kyrgyz-Turk Girls Vocational School
  -

Socio-economic Background

- Population: 5.400.000 (2008)
- Population growth rate: 1.2 %
- GDP per capita: 934,4 US$
- GNI per capita: 7769,4 US$ (in
- Inflation rate: 20% (2008)
- unemployment rate (% of labor force) : 8,0% (in 2011)
- Imports (M US$): 1134,2 (2008)
- Exports: (M US$): 2417 (2008)
- internet users (per 100 inhabitants): 15,7 in 2008
- major trading partners of exports; Russia, Switzerland, Kazakhstan
- major trading partners of import
  Russia, China and Kazakhstan
- Education expenditure (% of GDP): 6,6 (2005-2008)

Sources: United Nations Statistics Division- UN data for Kyrgyzstan

Industrial Sector Analysis

- **Geographic area**: In Bishkek area(metal working and spare parts, machines and equipment, manufacturing of home appliances, electrical devices, textile, food processing
- **Size, trends and outlook**: Small and medium sized plants with old technology
- **Products**: dairy, meat, fruit processing,textile, mining, furniture, cotton ginning, clothing
- **Target customers**: Russia, Switzerland, Kazakhstan, China
- **Leading businesses in the manufacturing industry**: Mining, textile, food processing and telecommunication
- **Main industrial sectors and those relating to TVET**: mining, agriculture. and food processing industries.

Foreign Investment

Foreign investments into the country in 2009

Countries	USD Millions	% of Total	Industry/sector
Kazakhstan	189,1	34.0	Banking, Tourism, Mining, Construction, Food Processing, Energy resources
Great Britain	100.7	18.0	Mining, Trade
China	51.2	9.2	Trade, Mining, Telecommunications
Russia	41.6	7.5	Energy resources, Telecommunications, Mining, Food Processing, Trade, Tourism

Source: Kyrgyz Investment Portal, September 2011

Labour Market

- **Numbers of employees** : 2.344.000 (in 2007)
- **Labor cost,** : Min. Wage: 75US$/month, Average salary/month: 300 US$/month
- **Labor force by occupation** is as follows in 2008: agriculture: 36.3% industry: 19.4% services: 44.3%
- **Per Capita TVET Expenditure (% of GDP)**: n.a
- **Government expenditure(% of GDP)**: 6,6 (2005-2008)

Labour Market-2

The country has labour şntensive industry.

Labour productivity- 2009-2011

	2009 Expected	2010 Forecast	2011 Forecast	2009-2011 Total 2008=100%
Growth rates of the employed	100,6	101,1	101,0	100,9
Labor productivity growth rates	104,1	104,7	105,5	104,8

Source. Country Development Strategy 2009-2001 p.11

Labour Market-3

Investments in the manufacturing and industrial automation technologies:

There is no investment in industrial automation technologies

Foreign investments into the country in 2009

Countries	USD Millions	% from Total	Industry/sector
Kazakhstan	**189,1**	**34.0**	**Banking, Tourism, Mining, Construction, Food Processing, Energy resources**
Great Britain	**100.7**	**18.0**	**Mining, Trade**
China	**51.2**	**9.2**	**Trade, Mining, Telecommunications**
Russia	**41.6**	**7.5**	**Energy resources, Telecommunications, Mining, Food Processing, Trade, Tourism**

Source: Kyrgyz Investment Portal, September 2011

Labour Market-4

- **Labor force needs in terms of vocational qualifications:**

  The following professions have been identified by the Ministry of Education and Science as priority occupations, **small business entrepreneur, merchant manager, office manager, secretary, farmer, hotel administrator, travel agent, IT expert, repair specialist, computer typist, electro-mechanic specialist**

Skills needs in Industrial Sector

- **Outline of government economic development plan**
  - Krygyzstan is a poor country and the first priority is given to struggle with powerty. The "Action Plan for Reforming the System of Secondary Vocational Education in the Kyrgyz Republic for 2005-2010".
- **Government plans for industrial development**
  - Mechanisms of coordination and harmonization of the regional development strategy with sectoral strategies have not been developed so far.
  - Priorities of development of the city of Bishkek include: (a) business tourism; (b) processing industry
  - Chui oblast development priorities: (a) agriculture, (b) processing industry, (c) gold mining
  - Talas oblast, the priorities of economic development include: (a)agriculture, (b)processing industry, and (c) mining

Education Management System

- **Structure:**
  - Formal education management is under the competence of the Ministry of education and science of the Kyrgyz Republic
  - the average expenditure per student at school amounted to 91,7 USD, for per student in professional and technical school 241 USD, for per college student 263 USD.
  - In Bishkek there are 47 universities in different disciplines
  - 11 yrs of educating system in schools and there is pilot implementation for transtion of 12 years in 40 selected schools.
- **numbers of teaching staff:** 6391 in 2007 including vocational lyceums and technicums and colleges)

Education Management System-2

Currently there are 110 vocational education institutions. Included in this number are 93 vocational lyceums, 11 vocational schools, 5 special vocational schools, 1 specialised school for convicted youth, and the Industrial-Pedagogical Vocational Technicum in Tokmok

	PVE: Vocational lyceums	SVE: Technicums and colleges	Total
Number of VET schools	112	72-public, 6- private	190
Total student enrolment	26,390	35,580	61,970
New students admitted	14,555	15,705	30,260
Students graduated	14,147	8,800	22,947
Number of teaching staff	3,166	3,225	6,391

Source: Annual Report on Enrolment of the Department of Primary Vocational Education. Data as on January 1, 2007.

Technical and Vocational Education System

Enrollment and graduation:

Total of 32.000 students are educating in TVET schools in 2011 and there are 3500 teachers and more than 100 occupation are being educated. Areas of growth are computer science, where growth was 10-fold, construction and architecture (40%), vehicle operation (80%) and consumer goods production technologies.

(Source: National Statistical Committee, Education and Science in Kyrgyzstan, 2008, p. 109)

Technical and Vocational Education System

No:of students who are graduated from their occupations in 2009-2011

№	By Sectors	1. 07. 2009		1.01.2011	
		Total no: of students	Full time educating	Total no: of students	Full time educating
1.	Energy	951	679	993	558
2.	Food	157	140	182	142
3.	Automobile	560	315	697	418
4.	Agro-based industry	1379	968	2251	1201
5.	Printing	164	123	169	118
6.	Construction	4789	2905	5835	3000
7.	Wood works	238	146	531	229
8.	Transport	3304	950	5265	991
9.	Jewelry	390	313	452	308
10.	Agriculture	3536	3336	4006	3363
11.	Tourism	275	101	321	154
12	Others	5540	3621	6912	3586

Source: www.kesip.in.kg

Technical and Vocational Education System

- **Job placement**
  In general, the job placement rate of VET Graduated students is about 60-65%
- **Training methodology of teaching staff**
  Through in service training + TA projects+ Grants
  it is planned to train 200 teachers a year by in service training.
- **No: of teaching staff required:** n.a

Linkages between Labor Market and TVET

- There is a lack of linkages between VET system and the private sector, as well as the lack of clear vision for its future development were emphasized

- VET system in Kyrgyzstan has limited relevance to labour market demand in terms of skill shortages and quality assurance mechanisms

- Construction and agriculture are the leading sectors among the others and there is a high demand by the VET

Linkages between Labor Market and TVET

daily communication and coordination between industrial sector and TVET facilities

- There is no daily communication and coordination between industrial sector and TVET facilities.

TVET Curriculum Development

- **Curriculum Design and Development Process**

❖ The facilities and labs of the VET schools are out of date and required to be modernized.

❖ Same problem exists for the boks and training material

❖ There is no specific curriculum at the VET schools on insustrial automation systems but there is request for electo-mechanic and electronic technicians and new branchs will be opened in next years.

❖ Because of lack of cooperation between industry and VET schools, practical training is not providing a value for the students in improving

Technical and Vocational Education Institutions and Organizations

- List of organizations

- Ministry of Education is corrdinating and controlling 110 VET schools.
- There are 47 universities and some of them has TVET colleges.
- There is one VET High School under Manas Krygz-Turk University
- There is one established Krygz-Turk Girls VET School
- 5 special vocational schools
- 1 specialised school for convicted youth
- 1 Industrial-Pedagogical Vocational Technicum in Tokmok
- 7 Multi professional training center (% in

International Donors

- cooperation projects:

- Development of the National Employment Programme;
  modular training- ILO
- Supporting the Establishment of Community Learning
  Centres- UNESCO
- Training in new agriculture, forestry and small community
  tourism business methods - Swiss Development Agency
- Modernisation of training infrastructure in selected sectors- GTZ(GIZ)
- Strengthening VET System in the country-ADB
- National Qualification Framework- ETF

International Donors-2

- **cooperation projects:**
  - Strengthening institutional capacity of selected pilot vocationa education schools- UNDP
  - TIKA (many projects)
  - JICA (many projects)

International Donors

Krygyzstan- Source of ODA(Official Development Aids)
Top 7 Donors (Average for last 5 years in US$ Million)

Turkey:	85,65
USA:	50.64
ADB:	36.75
IDA:	34.35
Germany:	25.46
EU:	24.20
Japan:	17.37

Source: **www.aidflows.org**. OECD/DAC, 2011

Conclusions

- **Existing capacity** of;
  - academic and practical teaching including curriculum: **Adequate**
  - teaching material and laboratory practice equipment etc. in view of technical education: **in progress but too slow due to lack of finance.**
  - regional and industrial needs: **has to be developed by the government.**
- needs of technical and vocational education: The government adopted a new Country Development Strategy(2009-2011)which considers education sector development, including vocational training as a precondition for sustainable economic growth and for ensuring competitiveness within the global economy

Recommendations

- **Recommendation toward the project formulation :**
  - Industrial Automation Technology is a new concept for manufacturing industry but there is need for training of electric, electro mechanic, technicians for entrepreneurs.
  - The lab facility and curriculum of pilot VET schools has to be modernized.
  - Foreign investors are training their technical staff by in-house training.
  - In addition to this project, some occupations urgently needed by the sectors could be trained in coordination with TIKA-Bishkek.

Recommendations

- Possible institution(s) or direct target group to be invited for the training in Turkey :
  - Krygyzstan Ministry of Education,
  - Manas University VET High School

Tajikistan

Interim Evaluation Workshop
26 October 2011

Mission

- Date: 9-12 October 2011
- City: Dushanbe
- Contacts visited:
  - TIKA
  - Ministry of Economy and Trade
  - Adult Training Center, Ministry of Labour
  - Tajikistan Technical University
  - Ministry of Education
  - Tajikistan Science Academy
  - Ministry of Industry and Energy

Socio-economic Background

- Population: 7.781.000 (2011)
- Population growth rate: 1.6 %
- GDP per capita: 362,7 US$ (2008)
- GNI per capita: 468,4 US$ (2008)
- Inflation rate: 13,0% (2009)
- unemployment rate (% of labor force) :2,5% (in 2008)
- Imports (n.a)
- Exports: (n.a)
- internet users (per 100 inhabitants): 8.8 in 2008
- major trading partners of exports; Turkey, Russia,Uzbekistan,İran and China
- major trading partners of import
- China, Russia, Kazakhstan, Turkey, Uzbekistan
- Education expenditure (% of GDP): 3,4 (2005-2008)

Source: Tajikistan Statistic Agency, Statistic Annual Book, 2010

Industrial Sector Analysis

- **Geographic area**: Dushanbe, east, northeast
- **Size, trends and outlook**: state owned small entrepreneurs, most of the factories have obsolete technology.and shortage of skilled labour-force.
- **Products**: Cotton, Aluminium,
- **Target customers**: Russia, China, Turkey, Italy, South Korea
- **Leading businesses in the manufacturing industry**: cotton fibre, aluminium, hydroelectric power and textile

Foreign Investment

Attraction of foreign investment into the economy of the Republic of Tajikistan in 2005-2009. USD Million)

	2005	2006	2007	2008	2009
Total investments	174,6	504,6	860,6	989,6	383,2
Direct investments	54,5	385,2	703,2	760,7	198,1
Other investments	120,1	120,0	157,4	228,9	183,1

Source: State Committee on Investment Report 2010 Dushanbe

Kazakhstan has 36,9 million USD investment in 2009 and China made 59,2 million USD direct investment in 2009

Foreign Investment

Planned Investment Program, 2010-2012 ($ million)

Sector	2010	2011	2012	Total
Energy	116.0		26.0	42.0 (56%)
Transport		51.0		51.0 (20%)
Reforms: Investment climate Access to finance	34.0		25.0	59.0 (24%)
Total	150.0	51.0	51.0	252.0 (100%)

Source: ADB Country Strategy Report 2010-2014, April 2010

Labour Market

- **Numbers of employees** : 4.442.700 in 2009 (59% labour force participation rate)
- **Labor cost,** : Min. Wage: 17 US$/month, Average salary: 70 US$/month
- **Labor force by occupation** is as follows in 2010:
  agriculture: 22.4%
  industry: 27.2%
  services: 51.4%
- **TVET Expenditure (% of GDP)**: 0,5 (in 2007)
  Total Education Expenditure (% of GDP): 3,4 (in 2008)

Source: 1) World Bank Country Profile Tajikistan 2007

Labour Market-2

- **Analysis on labor productivity** : n.a.
  Labour productivity is law due to shortage of electricity.
  capacity utilization is about 20-25% of installed capacity.
- **Investments in the manufacturing and industrial automation technologies**
  There is no infrastructure of industrial automation technology in manufacturing industries. Most of the factories have out dated technology.
- **Labor force needs in terms of vocational qualifications:**

Skills needs in Industrial Sector

- **Outline of government economic development plan**

  The Government issued a 10-year National Development Strategy (NDS), 2007-2015 that featured three overall goals which,

  (a) promotion of sustainable economic growth; (b) improvement of public administration; and (c) development of human resources

- **Government plans for industrial development**

  - energy sector(construction of new hydropower plants)
  - infrastructure projects(drinking water supply, irrigated farming)
  - Transport sector
  - Telecommunication sector

Education Management System

- **Structure:**

➢ 11 years of educating system and planning to transit to 12 years education.

➢ 3817 schools and colleges including 71 VET schools),

➢ teachers earn average 56 US$/per month.

Numbers of teaching staff:

103.174 in 2008 and 48,6% is women teachers.

2700 VET teachers (2008)

Source: WB Country Report Tajikistan, 2009

Education Management System-2

- **structure and figures:**

No of total students in TVET: 55.968 (2007-2008)

% of total enrolment: 2,99 %

No: of total students in general secondary education : 1.672.731 (2007-2008)

% of total enrolment: 89,22 %

other training institutions: 7.79 %

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per capita TVET expenditures(% of GDP) : 21,6

Technical and Vocational Education System

- Enrollment and graduation

Growth rate of enrolment of students

	2004		2005		2006		2007		2008	
	youths	girls	youths	girls	youths	girls	youths	girls	youths	girls
Primary VET education	99	104	100	113	92	92	95	55	115	57
Secondary VET education	93	109	116	123	101	121	109	114	109	116
Higher VET Education	98	109	118	132	110	135	114	139	105	125

Source: Tajikistan National Human Development Report 2008-2009

Technical and Vocational Education System-2

The overall employment by sectors for 2010, thousand of persons

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Industry	76,7	76,4	75,8	77	77,7	78	78,4	78,9	78,2	80,5	78,7	79,6
Agriculture	498,6	502,5	495,7	498,8	506,2	503,2	508,1	513,7	511,3	511,2	511,2	509,9
Forestry	1,7	1,7	1,7	1,7	1,7	1,7	1,8	1,8	1,7	1,7	1,7	1,8
Fishery	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,2
Transport	18,7	19,2	19	18,7	18,5	18,5	18,9	18,3	18,7	18	18,1	17,8
Communication	8,2	8,1	8,3	8,4	8,3	8,3	8,1	8,2	8,2	7,9	8	7,9
Construction	22,8	23,7	23,8	24,7	25,3	25,6	25,2	25,4	24,3	22,4	23,8	24,1

Source: Statistics Agency of Tajikistan

Linkages between Labor Market and TVET

- The level of general employment in Tajikistan is relatively not high (7.4%) and is gradually declining. This is mainly caused by the impact of labour migration on the labour market condition.

- At the same time the level of unemployment among urban population (17.85%), the youth at the age of 15-29 years old (19.2%) and among women (8.54%) is much higher

- The reason is the lack of technical knowledge. Only 25.4% of the

Linkages between Labor Market and TVET

coordination between industrial sector and TVET

facilities:

Considering the high level migration to Russia, the remaining

labour force in the country could be trained in line with the

needs of labour market.

Ministry of Labour providing coordination between industry and TVET education.

There is also need for establishing adult

TVET Curriculum Development

- **Curriculum Design and Development Process**

➢ In general, the quality of training, the logistical and human resource base of these facilities are weak and do not meet state standards inadequate supply of proper quality textbooks

➢ The student-computer ratio is 62 students per computer, which is inadequate

➢ teaching standards of the equipped

International Donors

- cooperation projects:

ADB Planned Technical Assistance Program, 2010–2012, ($ million)

Sector	2010	2011	2010	Total
Energy	0.50	0.50	0.50	**1.50** (30%)
Transport		0.50	0.50	**1.00** (20%)
Reforms	0.80	0.50	0.50	**1.80** (35%)
Climate change	0.78			**0.78** (15%)
Total	**2.08**	**1.50**	**1.50**	**5.08** (100%)

ADB annual activity report.
2010

Technical and Vocational Education Institutions and Organizations

- National Adult Training Center of Tajikistan (NATCT) in Dushanbe with four regional branches
- Second NATCT is being established by TIKA for service sector.
- There is no private VET school.
- All VET schools are attached to Ministry of Education (71 public basic vocational educational institutions, vocational technical schools and vocational

Technical and Vocational Education Institutions and Organizations

- List of donor organizations
  - ADB
  - EU
  - DVV International
  - UNDP
  - GTZ/GIZ
  - IIZ/DVV (German Adult Training Association)
  - German Development Service (DED)
  - ETF (European Training Service)
  - JICA
  - TIKA

Conclusions

- **Existing capacity** of;
  - academic and practical teaching including curriculum: Not sufficient
  - teaching material and laboratory practice equipment etc. in view of technical education: n.a
  - regional and industrial needs: the industry will be in need of these technical personnel in the long term. However, the demand will be based on the investments.
- needs of technical and vocational education: the labs, books and training materials are obsolete and has to be modernized.

Recommendations

- **Recommendation toward the project formulation:**

The industrial structure and technology level is not supporting the industrial automation technology but the organizations are stil requiring;
gas welders, fitters, sanitary technicians, electricians, elevator operators, electrical technicians, plasterers, crane operators, painters, carpenters, tile layers, processors of agricultural products, cooks, hairdressers, appliance repairmen, foreign-made car mechanics, waiters, house-maids,

Recommendations

- **Possible institution(s) or direct target group to be invited for the training in Turkey :**
  - Ministry of Labour
  - Ministry of Economy and Trade (Partner of TIKA)

Pakistan
Country Survey

Interim Evaluation Workshop
26October 2011

Mission

- Date: 3-6 October 2011
- City/Cities: Islamabad
- Contacts visited: **TIKA** Islamabad Office-Programme Coordinator Ms. Elif TÜRKİSLAMOĞLU , Mr. Cahit ASİL, Mr. Takatoshi NISHIKATA, Res.Rep **JICA** Pakistan Office.
- **Mr.Qamar Zaman CHUDHARY, Minister** (Secretary), Ministry of Professional and Training; **Mr. Asif BAJWA, Minister** of Federal Bureau Statistics of Pakistan, Mr. Arif-Ul-ullah Khan, Director, National training Bureau, Mr.Asmatullah Khan , Deputy Secretary , Zuhfran Qasim, Assistant Chief (Economic Affairs Division) , Mr.Tariq Shafi Chak, Executive Director , **(NAVTEC),** Director General, Shahrukh Nusrat, Mr. Arif U-Ullah Director, Muhammad Ashraf Asim Deputy Director, Syed Wazaif Ali Bokhari Assistant Director at Ministry of Labour and Manpower, Staff of related Technologies National Training Bureau, Mr. Sikandar Ahmed Rai, Executive Director General, Board of Investment **(BOI),** Syed Asghar Abbas Rizvi, Director, Ms. Huma Waheed, operations Officer. **World Bank**; Junid Iqbal Chadury sectary Capital Administration and Development Division, Muhammad Rafique Tahir, Joint Secretary (EDU/Estb.), Director General, Mr Arif Mahmood Cheema, Federal Bureau Statistics of Pakistan, Khalid Islam General manager Engineering Development Board, Mudassar Iqbal, Deputy General manager Engineering Development Board

Socio-economic Background

- Population: 187342721
- Population growth rate: 1,58%
- GDP: $464.9 billion (2010 est.)
- GNI per capita: $ 1254 in 2010-11
- CPI (inflation rate): Inflation rate (consumer prices): 14.1 percent during July-April (2010-11),
- unemployment rate (% of labor force) 15.4% (2010 est.)
- enrollment rate import
- internet users (per 100 inhabitants): 10.5
- major trading partners of exports; China: 7.3, Saudi Arabia: 10.7, UK: 4.3, Germany: 4.2
- major trading partners of import : china: 17.9, Saudi Arabia: 10.7, UAE:10.6, Kuwait: 5.5, USA: 4.9, Malaysia:4.8
- education expenditure (% of GDP): 2,7%

Industrial Sector Analysis

- Geographic area: Karachi:13,386,730, Lahore: 7,214,954, Faisalabad:2,912,269
- Size, trends and outlook: Mining and quarrying, Fuel extraction industry, Manufacturing, Construction, Electricity, Gas, Water
- **Products:** Agriculture still employment to 45% essential input for agro-based industry; cotton, wheat, rice, sugarcane, fruits, vegetables; milk, beef, mutton, eggs;
- Chemicals, Food, beverages and tobacco; Machinery and transport equipment; Other manufacturing textiles and clothing
- Target customers: International and national products buyers
- Leading businesses in the manufacturing industry: gypsum, limestone, chromites, iron ore, rock salt, silver, gold, precious stones, gems, marble, copper, coal, graphite,

Foreign Investment:

- Pakistan is fast adapting to the challenges of globalization as an emerging market. Its economy was able to weather severe storms in FY2008-09.
- **FDI plays an important role**: technology development, assisting human capital formation, contribution to international trade integration, helping in creating a more competitive business environment and promoting enterprise development.
- Pakistan has the most **liberal investment policy** regimes and public-private partnership frameworks in the entire South Asian Region.
- **Net inflow of foreign investment** Pakistan from July-March 2010-11 US$ 301.5
- Major exports to Japan are textile and textile articles. Yarn is a Pakistan's major export product to Japan.
- Major imports from Japan are motor vehicles & their parts and machinery.

Foreign Investment - Investments by Companies

Telecommunication companies	Automobile assembler	Banks	Food And Personal Care	Oil and Gas	Engineering consultants	Chemicals	Pharmaceuticals	Others
Telenor Pakistan	Dongfeng Motor Corporation	ABN Amro/RBS	Peek Freans	BHP Billiton	Siemens Pakistan	ICI Pakistan	Abbot	Nestle Pakistan
Nextech	Ghandhara Nissan	Barclays Bank	Procter & Gamble	MOL			Pfizer	McDonald's
Transworld	Hinopak Motors	Dubai Islamic Bank	Unilever Pakistan	OMV				Metro Cash & carry
Warid Telecom	Hyundai Motors	Standard Chartered Bank	LU	PETRONAS				KFC
Wateen Telecom	Indus Motors Company			Schlumberger				
Netsol Technologies	Atlas Honda							
Palmchip Corporation								
CyberNet								

Country Wise FDI Inflows ($ Million)

Country	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12 (Jul-Aug)
USA	92.7	326.4	211.5	238.4	325.9	516.7	913.1	1,309.3	869.9	468.3	238.9	33.1
UK	90.5	30.3	219.4	64.6	181.5	244.0	860.1	460.2	263.4	294.6	208.1	14.9
U.A.E	5.2	21.5	119.7	134.6	367.5	1,424.5	661.5	589.2	178.1	242.7	284.2	62.7
Japan	9.1	6.4	14.1	15.1	45.2	57.0	64.4	131.2	74.3	26.8	3.2	0.9
Hong Kong	3.6	2.8	5.6	6.3	32.3	24.0	32.6	339.8	156.1	9.9	125.6	2.0
Switzerland	3.6	7.4	3.1	205.3	137.5	170.6	174.7	169.3	227.3	170.6	47.2	6.6
Saudi Arabia	56.6	1.3	43.5	7.2	18.4	277.8	103.5	46.2	(92.3)	(133.8)	6.5	1.9
Germany	15.5	11.2	3.7	7.0	13.1	28.6	78.9	69.6	76.9	53.0	21.2	1.7
Korea (South)	3.7	0.4	0.2	1.0	1.4	1.6	1.5	1.2	2.3	2.3	7.7	0.4
Norway	41.9	0.1	0.3	146.6	31.4	252.6	25.1	274.9	101.1	0.4	(48.0)	(62.5)
China		0.3	3.0	14.3	0.4	1.7	712.0	13.7	(101.4)	(3.6)	47.4	7.9
Others		76.6	173.9	108.6	369.3	521.9	1,512.2	2,005.2	1,964.2	1,019.6	631.6	42.8
Total including Pvt. Proceeds	322.4	484.7	798.0	949.0	1,523.9	3,521.0	5,139.6	5,409.8	3,719.9	2,150.8	1,573.6	112.4
Privatisation Proceeds	-	127.4	176.0	198.8	363.0	1540.3	266.4	133.2	0.0	0.0	0.0	0.0
FDI Excluding Pvt. Proceeds	322.4	357.3	622.0	750.2	1,160.9	1,980.7	4,873.2	5,276.6	3,719.9	2,150.8	1,573.6	112.4

Labour Market

- **Labor force:** 55.77 million country comparison to the world: 10
- **Labor force - by occupation:**
- **agriculture:** 43%
  industry: 20.3%
  services: 36.6%

"The traditional structure of our domestic economy has failed to produce competitiveness, enhanced quality, or increased productivity of the industries".

- Influence of industrial automation technologies investment to productivities

"many businesses and government departments are trapped in the 'low skills' regime in relation to office work, while wholesale and retail trade, hospitality, tourism, agriculture and horticulture services, also suffer greatly from lack of quality training."

- Labor costs: 10.7 (% of income per capita)
- Investments in the manufacturing and industrial automation technologies: "…long term challenges include expanding investment in education, healthcare, and electricity production, and reducing dependence on foreign donors."
- Labor force needs in terms of vocational qualifications: *"Despite improvements, TVET system still unable to provide enough qualified workforce for the industry."*

Skills needs in Industrial Sector-
Trainings Of Technicians

- Cars/ LCVs/ HCVs
- Motorcycles and Rickshaws
- Auto parts
- Home appliances (Electrical)
- Cutlery and Kitchenware
- Electrical Machinery & Equipment
- Heavy Sheet Metal Fabrication
- Electronics
- Forgings and Castings
- Refractory
- Tractors, Farm Machinery and Equipment
- Moulds and Dies
- Industrial Machinery and Equipment

Surgical Instruments and Medical Equipment
Electric Fans, Pumps
Wires and Cables, Steel Structures
Pipes, Tubes, Valves, Fittings
•Cement
•Sugar
•Textiles and Finished Products
•Rubber
•Petrochemical
•Mining

Skills needs in Industrial Sector

Government Plans For Industrial Development

- **Growth in the agriculture**
- **Output increase manufacturing**
- **Large-scale manufacturing** grew 1.7 percent
- The **services sector** grew by 4.1 percent ; Per capita real income has risen by 0.7
- **Net inflow of foreign investment** increased
- **Overall exports** recorded a positive growth of 27.8 percent
- **Imports** during the first ten months July-April (2010-11) increased by 14.7,
- **Account Balance** improved significantly during the last two years
- **Exchange rate** remained more or less stable
- **Foreign direct investment** (private) stood at $1232 million

Education Management System

- The Federal Ministry of Education has the overall responsibility for the development and coordination of national policies, plans and programmes in education including curriculum development,
- Implementation of the policies is the responsibility of the local administration.
- Each province has its own Department of Education.
- numbers of teaching staff: Primary: 345,457, Middle: 99,098, Secondary: 66,522, Higher Education: 16,731, Secondary Vocational:6,582, Colleges: 33,325, IT: 337
- Private education: Enrolment in private schools is now in the order of 42% of total enrolment and 37% at the middle school level. At the secondary and higher secondary level, the enrolment in private education is 30% and 64% respectively.
- Primary education: Grades I-V.
- Middle level education: Grades VI-VIII
- Secondary Education: Grades IX through X
- Higher secondary education, "intermediate stage", Grades XI to XII.

Technical and Vocational Education System

- Administered by a number of federal, provincial and private agencies NAVTEC-TEVTA:
- Government Vocational Institutes (GVIs), administered by the Provincial Education Department.
- Technical Training Centres (TTCs), vocational training centres (VTCs), and Apprenticeship Training Centres (ATCs), administered by the Provincial Labour Departments.
- In-Plant training Programmers, i.e. apprenticeship training under the Apprenticeship Training, administered by the Provincial Directorates of Manpower and Training of Labor Departments in establishments employing 50 or more workers.

Private technical training institutions

- On-the-job training within industries
- Commercial training institutes under the Ministry of Education
- Polytechnic institutes and colleges

Informal sector training / Ustad Shagird System

Technical and Vocational Education System…contd.

Job Placement Policy Focus Of The Government

- **creation of decent employment opportunities** and **human resource development.**
- The *specific policies and programs*:
- Sectoral Development
- Investing in Water Resources
- Development Program and Employment Generation
- Micro Credit Facilities through SME Bank
- Micro Credit Facilities through Khushhali Bank
- President' s Rozgar Scheme by National Bank of Pakistan (NBP)
- Information Technology
- Overseas Employment
- National Internship Program (NIP)
- NAVTEC Skill Development Program
- Skill Development Councils

Technical and Vocational Education System…contd.

National Vocational & Technical Training Commission (NAVTEC)

•regulate, provide policy direction for vocational education & training, to meet national and international demand for a skilled workforce.

• Develop strategy and an enabling environment to the public and private sectors to implement training for skills development to enhance social and economic profile.

• Develop national occupational skills standards,

•curricula and trade testing certification systems for all sectors in which technical and vocational education and training is necessary for the workforce.

•Training methodology of teaching staff

•Technical training have high unit costs,

•little responsiveness to market demands and changes,

•non availability of qualified teachers

•low salaries and

•inadequate career progression.

•The process is still supply driven in the wrong directions

•Some efforts to involve the private sector in the system.

• Skill and education levels of the workforce - greater urgency;

•changing content of international trade,

•share of high technology in manufactures and services is increasing

Linkages between Labor Market and TVET

- **Technical Education**: post-secondary courses of study and practical training aimed at preparation of technicians to work as supervisory staff.
- **Vocational Training**: lower level education and training for the preparation of skilled or semi skilled workers in various trades; does not enhance their level with respect to general education.
- daily communication and coordination between industrial sector and TVET

TVET Curriculum Development

- **Curriculum Design and Development Process**
  - **NAVTTC Policy**
  - To make TVET responsive to industries' demands, technological advancements, and global trends
  - To prepare policies and training plans in coordination with stakeholders
  - Move from academic type learning to competency based training
  - Recognition of prior learning and formalizing the informal sector
  - Shift from supply oriented to demand led TVET

Technical and Vocational Education Institutions and Organizations

- Federal Ministry of Education (General Education, Teachers' training and curriculum development)
- Ministry of Labor and Manpower: established **five Skill Development Councils (SDCs)** one each at Islamabad, Karachi, Lahore, Peshawar and Quetta.
- The SDCs assess the training needs of their geographical areas, prioritize them on the basis of market demand and facilitate training of workers through training providers in the public and private sectors.
- **National Vocational and Technical Education Commission (NAVTEC)** at federal level and Provincial Technical Education and Vocational Training Authorities (PTEVTAs) at provincial level.
- **Financial**: Rs 300 million allocated to (NAVTEC) for PSDP 2011-12 to fund 115 development projects including 76 ongoing programs (Rs 2753.9 million cost) at total cost of Rs 5291.5 million.

International Donors

- **Cooperation Projects**
  - JICA-TEVTA: Project for Improvment of Technical Education, Labour Market System and Analysis, National Intership Program, Labour Policy 2010: Salient Features
  - **Memorandum of Understandings with British Council**: NAVTEC
  - Training to the youth of Sindh, Punjab, AJK, Khyber Pakhtunkhwa, Federal Capital and Northern Areas; next phase Baltistan and backwards areas are being targeted.
  - **Accreditation and Certification of TVET Institutions**
  - NAVTEC has signed MoU with **Asia-Pacific Accreditation** and Certification Commission (APACC),Manila
  - JICA-TEVTA The Preparatory Survey On The Project For Strengthening Of DAE Mechanical & Architecture Departments In GCT Railway, Road Of Punjab Province,

Conclusions

- Existing capacity of academic and practical teaching including curriculum, basic, compulsory and selective subjects, teaching material and laboratory practice equipment etc. in view of technical education, regional and industrial needs is very promising for Pakistan.
- There is need of technical and vocational education within the country and also capacity-building abroad.

Potential sector or needs to be covered by the training in Turkey:

- Cars/ LCVs/ HCVs
- Motorcycles and Rickshaws ; Auto parts; Home appliances (Electrical) ; Cutlery and Kitchenware
- Electrical Machinery & Equipment ; Heavy Sheet Metal Fabrication ; Electronics ; Forgings and Castings
- Refractory; Tractors, Farm Machinery and Equipment ; Moulds and Dies
- Industrial Machinery and Equipment ; Surgical Instruments and Medical
- Equipment ; Electric Fans, Pumps ; Wires and Cables, Steel Structures ; Pipes, Tubes, Valves, Fittings
- Cement ; Sugar ; Textiles and Finished Products ; Rubber ; Petrochemical ; Mining

Recommendations

- to develop and put into action a specific communication strategy, to create specific awareness on next steps for a systematic cooperation.
- Current investment strategy very promising for Japanese and Turkish investors;
- Existing warm climate among Turkey-Japan and Pakistan, cooperation between MoNE-CoHE and Ministries of Education between these countries, is a very high probability to make it happen;
- **Regional Cooperation Program on TVET.**
- Possible institution(s) or direct target group to be invited for the training in Turkey: NAVTEC and Lahore TEVTA; Board of Investment; Board of Engineers; Ministry of Professional and Training-National training Bureau;

Turkmenistan Country Survey

Interim Evaluation Workshop
26October 2011

Mission

- Date : 10-13 October 2010
- City/Cities: Ashgabat
- Contacts -visited: Ms. Zehra ALTUNDAĞ-TIKA Programme Coordinator ; Mr. Şevki MÜTEVELLIOĞLU Turkey' s Ambassador to Turkmenistan; *Mr. Serdar AKAR Chief Attaché of Commerce, Turkish Embassy-Ashgabat.*

Workshop Participants: Mr. Hiroshi Nagao, Attaché, Special Analyst, Embassy of Japan in Turkmenistan; Mr. Sang-Tae Park, 2nd Secretary and Consul; *Mr. Theo Hensels, Coordinator, European House in Turkmenistan*

J. Gurtliyeve- Vocational Training School; B. Vekilova - Entrepreneurship School; N. Abubakirova- Vocational Training School; Z. Hudayberdiyeva- Vocational Training School; Erkin Astanov- Ministry of Energy (Turkmenenergo); N. Babakuliyeva - Ministry of Work Population And Social Protection ;M. Sılapov - Ministry of Work Population And Social Protection; K. Atayev Trade Unions Association; K. Mıratberdiyev Ministry of Textile (1th Vocational School); G. Jumayeva Ministry of Textile ; Batır Hojayev Ministry of Economy And Development; Sulgun Yazlıyeva UNDP; M. Sopiyeva Ministry of Construction; L. Seyidova - UNICEF; M. Gubayev Ministry of Oil And Natural Gas; A. Nnalıyev Ministry of Communication; R. Berdiyev Vocational School of Construction; G. Gadjiagayeva Vocational

Socio-economic Background

- Population: 5,041,995.
- Population growth rate: 1.14%.
- GDP
- GNI per capita: 6,980$
- CPI (inflation rate) No data
- unemployment rate (% of labor force): No data
- enrollment rate: 100%
- internet users: service
- inadequate.
- major trading partners of exports; China 28.6%, Turkey 10.6%, UAE 7.2%, Afghanistan 6.5%, Iran 6%, Italy 5.4%, Kazakhstan 4.5%
- major trading partners of import : Russia 21.6%, Turkey 20%, China 9.2%, UAE 7.7%, Germany 5.7%, Malaysia 4.6%, Ukraine 4.5%
- education expenditure (% of GDP): 3,9%

Industrial Sector Analysis

- Geographic area: Ashgabat: 871,500, Türkmenabat:1,334,500, Daşoguz: 1,370,400, Mary:1,480,400, Anau:939,700
- Size, trends and outlook and Products: investments *oil, natural gas, cotton and food processing*
- **GDP - composition by sector:**
  Agriculture: 8.3%
  Industry: 21.4%
  Services: 70.3% (2010 est.)
- Target customers: domestic & international buyers of comodities.
- Leading businesses in the manufacturing industry: *et*xtile, cement, fertilizer, furniture, plastic pipe, marble
- Main industrial sectors and those relating to TVET: no data

Foreign Investment

- Foreign investment of the whole country (especially those from Japan), including import / export and foreign investment trend, industrial sector trend, total number and size of manufacturer: Turkish firms- large projects in textile and textile industry;
- The contracts for the purchase of;
  - agricultural equipment from John Deere
  - Installation of the factory equipment for the soap manufacturing
  - modernizing the dairy -processing lines in the Dairy factory of Ashgabat Syit
  - delivery and assembly of the equipment for the Youzhiy Gamishlj deposit .

Labour Market

Turkmenistan's labour market is not fully developed, and the informal sector remains an important source of employment. The public sector provides the majority of jobs. Labour regulations are outdated and not enforced effectively. . Although agriculture accounts for roughly 10% of GDP, it continues to employ nearly half of the country's workforce.(Heritage Foundation *2011 Index of Economic Freedom)*

Labour force: 2.3 million (2008 est.)
Labour force - by occupation:
Agriculture: 48.2%
Industry: 14%
-Services: 37.8% (2004 est.)
Unemployment rate: 60% (2004 est.)
Population below poverty line: 30% (2004 est.)
Household income or consumption by percentage share:
-Lowest 10%: 2.6%
Highest 10%: 31.7% (1998)

Skills needs in Industrial Sector

- Data and statistics on VET and labour market is limited.
  - Modernization of the vocation education system,
  - analyze the demand on the labour market,
  - support the youth employment

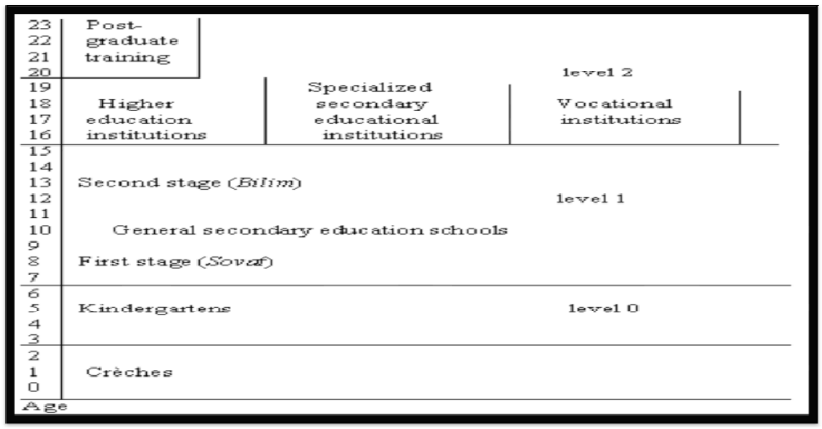
Education Management System

- Structure:

The Minister of Education is assisted by four Deputy Ministers;

- …is represented by the *velayat* administrative head or chief executive who has authority over the velayat' s management of education.
- The education departments of the various etraps (districts) and cities handle the management of their respective schools, preschools and out-of-school institution activities.
- The heads of the general management and education departments are accountable to the Ministry of Education for the content of education; scientific and methodical supply for the system; and improvement of personnel

Education Structure



Education Management System

- **Primary Education**: 3 years, Grade 1-3, Age level-7-10
- **Secondary Education**: 7 years, Grade 4-10, Age level-10-16
- Certificate/diploma awarded: State Examination for School Leaving Certificate
- **Specialized Secondary**: Colleges and Technical Schools, 2 years, Age level-16-18
- Certificate/diploma awarded: Diploma of Specialized Secondary Education
- **Vocational Secondary:** Vocational Lyceum and College, 1 year, Age level-16-17
- Certificate/diploma awarded: Diploma
- **General secondary education** is compulsory and consists of ten years of study. Secondary school education is free throughout the country
- Student enrollment: 100%
- Numbers of teaching staff: Above 65,000 (of whom 62,7% female teachers)

Technical and Vocational Education System

- *Vocational School* - a two-year or three-year college for secondary school graduates that provides technical training in specific fields. 12 vocational schools exist in each region of the country and provide *medical, pedagogical and art* training.
- Currently there are 17 four-year higher education institutions in Turkmenistan, all of which are located in the capital of Turkmenistan, Ashgabat (exception: Pedagogical Institute in Turkmenabat and the Energy Institute in Mary)
- Enrollment and graduation No Data….
  - Job placement
  - Staff training
  - Recruitment
  - Training methodology of teaching staff

Linkages between Labor Market and TVET

- Vocational schools and institutions offer guidance on career planning and recruitment. On the other hand no data is available for its effectiveness as of yet.
- Since there is always shortage of workforce in the country, graduates have no significant trouble landing jobs in the industry.

TVET Curriculum Development

- Curriculum development and planning is under the responsibility of Ministry of National Education.
- Course curricula are based on very old practices and method of teaching.
- No e-learning.

Technical and Vocational Education Institutions and Organizations

- Vocational Schools run under Ministry of Education

International Donors

- **The European Commission (EC)**: With the new government elected in 2007 the country has re-established relationships with donors working in the education sector and initial consultations have been conducted at the end of 2007 and beginning of 2008.
- The **second project** under DCI AP2008 focuses on the **VET system** and aims at designing a reform program to increase quality of VET and relevance for the needs of the labour market. **UNICEF** is actively working with the ministry of education to provide capacity building opportunities and a daily cooperation with the ministry of education is being established.
- **USAID** has implemented a project on **teacher training** in basic schools up to 2007
- **bilateral agreements on education** opportunities with countries involved in economic agreements with the government, such as the **Russian Federation and Turkey**; and some European countries such as Norway which has indicated its interest to finance a cooperation project in VET.
- **TIKA** is already being engaged in providing vocational training for young unemployed people who can easily take part in the service sector. There are programmed preparations between Turkmenistan Government and TIKA for further vocational trainings in the areas of "Hotel and Restaurant Service Staff Training", "Bureau Management and Assistant Training". Last but not least, current possible "Extension" project

Conclusions and Recommendations-1

- As per the observations, there is a need for skilled labour force and finding qualified workforce is a challange.
- Ever-present labour-shortages.
- Recent government interventions to education system has yet to produce any results; sharing best practices/country experincs is needed.
- Very limited cooperations with NGO's/international expertise while defining the TVET policies.
- No accurate data on methods and techniques have still being used in TVET.
- Textile-Energy-manufacturing sectors needs to be covered by the training in Turkey
- **"Capacity building/ vision setting / policy recommendation efforts needed for technical and vocational education** within the country in

Conclusions & Recommendations-2

Strategy for Turkmenistan might include;

- a visit from Turkish MONE-CoHE / JICA, experts targeting one-to-one contacts with high level decision makers, between Ministries of Education.
- Prsent positive climate for cooperation with Japanese and Turkish investors; relevant *umbrella organizations need to explore for further opportunities.*
- Awareness raising campaign and also capacity building activities recommended for Turkmenistan;
  - Awareness raising for policy makers and local stakeholders on VET reform needs; Vocational education and training system development;
  - Best international practices to shared to implement VET reform
  - Organised seminars in the country and the priority group to be invited in the events organised in Turkey.

添付資料５　先方政府との協議資料

Detailed Planning Mission
for
Industrial Automation Technology (IAT)
Extension Project for Central Asian / Middle East Countries

Kick Off

Objective

- Discuss details of technical cooperation project proposed from MONE “Industrial Automation Technology (IAT) Extension Project for Central Asian / Middle East Countries “
- Agree on M/M (including PDM, PO, project implementing Plan, R/D(draft))
- Evaluate feasibility of the plan

Member

Name	Assignment	Job Title	Occupation	Period
Hiroyuki TAKADA (Mr.)	Leader	Senior Representative	JICA Turkey Office	
Masatoshi TOKITA (Mr.)	Education System	Professor and Vice President	Kisarazu National College of Technology	13 November - 19 November
Yosuke NISHII (Mr.)	Project Planning	Representative	JICA Turkey Office	
Hirofumi ISHIZAKA (Mr.)	Project Design Analysis	Consultant	IC Net Limited	13 November - 19 November

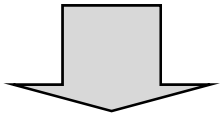
Schedule

Mission Members (Sector)				Mr. Takada (Team Leader)	Mr. Nishii (Cooperation Planning)	Mr. Tokita (Education System) Mr. Ishizaka (Evaluation)	Accomodation
Date			Time	Activity			
1	11/13	Sun	AM				
			14:40 23:05			Dept. Narita （TK051） Arriv. Ankara （TK2186）	Ankara
2	11/14	Mon	10:00	JICA Turkey Office Meeting (Internal Mission Meeting)			Izmir
			13:30	Kick Off Meeting with MoNE and TIKA			
			17:00		Leave MoNE to Airport		
			18:50		Move (Ankara → Izmir)		
3	11/15	Tue	10:00 10:30		Courtesy Call to Principal of Izmir Anatolian Technical High School Meeting with Izmir Anatolian Technical High School (TTC)		Ankara
			PM 20:45		Meeting with Izmir Ankatolian Technical High School (TTC) Move (Izmir → Ankara)		
4	11/16	Wed	10:00	Discussion on MM with MoNE, TIKA （Outline of Project(Purpose, Activity, Inputs))			Ankara
			PM	Discussion on MM with MoNE, TIKA （Outline of Project(Implement Structure, Undertakings))			
5	11/17	Thu	10:00	Discussion on MM with MoNE, TIKA (PDM, PO)			Ankara
			PM	Discussion on MM with MoNE, TIKA (Draft R/D, procedures, others)			
6	11/18	Fri	AM	Signing of MM with MoNE and TIKA			Ankara
			PM	Report to JICA Turkey Office Report to Embassy of Japan			
7	11/19	Sat	AM			Prepare for Depature	
			16:00			Dept. Ankara（TK2153)	
8	11/20	Sun	AM				
			13:10			Arriv. Narita （TK050)	

Overall Image of the Project

Project Title

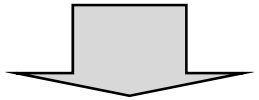
- Industrial Automation Technology (IAT) Extension Project for Central / Middle East Countries



- Industrial Automation Technology (IAT) Extension Project for Central & South Asia / Middle East Countries

Background

- 2000-2006: Establishment of IAT Department
- 2006 : Establishment of TTC
- 2007-2010: Teacher Training System Development



- 2011-2013: TCTP

Strategy

- Enhancement of technical education and vocational training capacity of trainees

- Enhancement of Training Planning and Implementation Capacity of Turkish Side
- Effective Implementation of TCTP
  - Training Planning
  - Training Provision
  - Follow-up Provision

Analysis of Target Countries

	Pakistan	Iran	Uzbekistan	Kzakhstan	Azerbaijan	Kyrgyzstan	Turkmenistan	Tajikistan	Syria	Afghanistan	Palestine	Iraq
Economy/Industry Level	◎	◎	○	○	○	×	△	×	(△)	(×)	(×)	(○)
TVET System Development Level	◎	◎	○	○	○	△	×	×	(△)	(×)	(×)	(×)
Technical Level	◎	○	○	○	△	△	△	×	(△)	(×)	(×)	(×)
Total Evaluation	◎	◎	○	○	○	△	△	×	△	×	×	×
Willingness of Participation	◎	×	○	◎	◎	◎	○	○	(○)	(×)	(×)	(×)

Iran: No intention for participation
Syria: Fragile political situation
Iraq: Insecure security situation

( ) Assumptions based on the hearing from JICA Offices

Possible Grouping and Strategy of the Target Countries

Group	Country Names	Training Strategy
Country Focused Target	**Pakistan、Uzbekistan 、Azerbaijan、Kazakhstan (4 countries)**	• **Corresponding to individual needs (Country Focused Training for each Countries)** • **Progress of level for each year** • **Same trainees for every year**
Group Target	**Kyrgyzstan、Turkmenistan 、Tajikistan、Afghanistan、Palestine (5 Countries)**	• **Corresponding to common needs (Group Training)** • **Introductory Training for IAT with basic techniques** • **Open recruitment for each year**

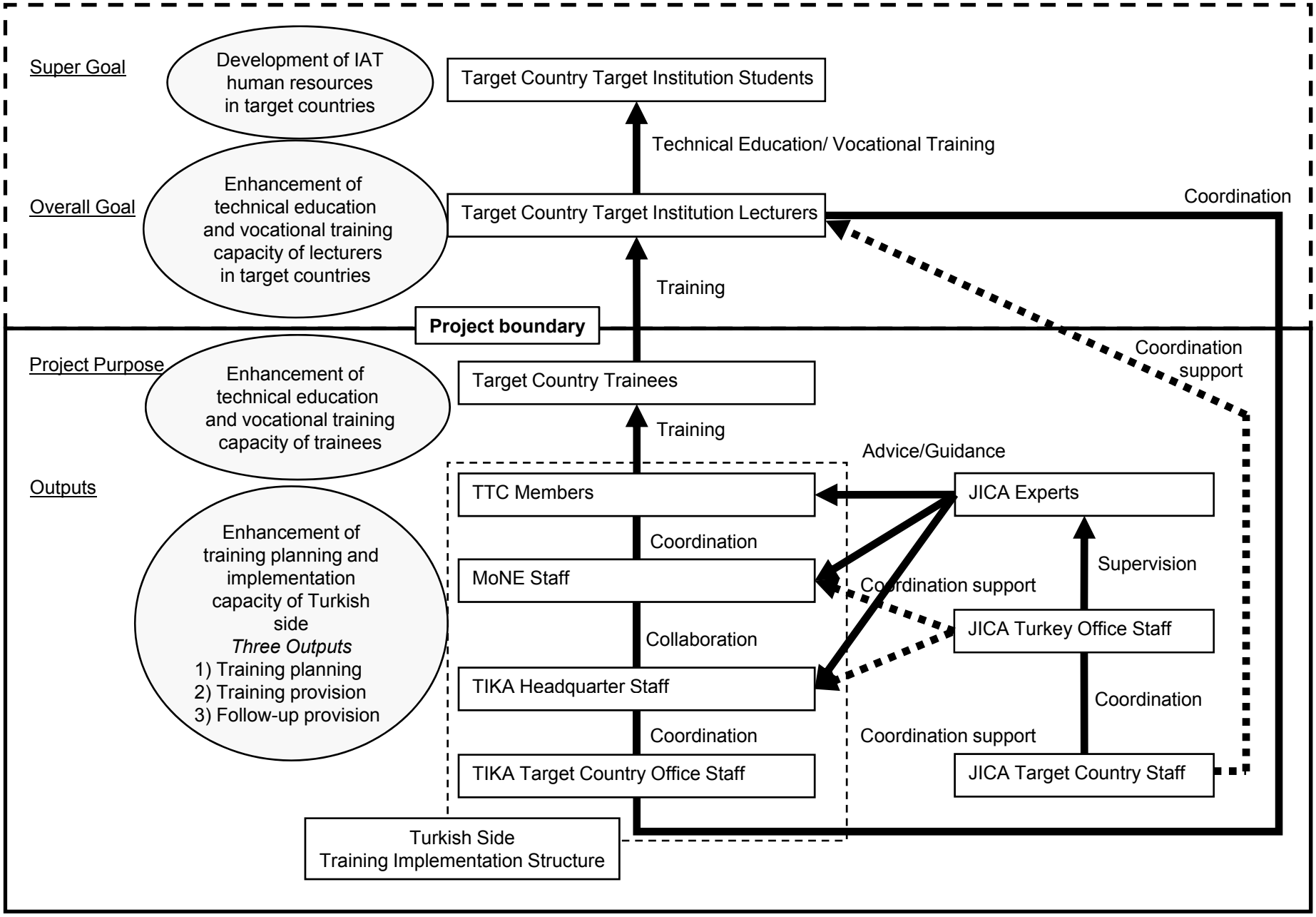
Possible Implementation Plan for TCTP

Group	**No. of Countries**	**Course Type**	**No. of Training per year**	**No. of Participants Per year**	**Duration per course**
Country Focused Target	4 Countries	Country Focused Training	4 Courses (for each Country)	10 participants X 4 Courses = 40 participants	3 weeks
Group Target	5 Countries	Group Training	2 Course	2 Participants X 5 Countries X 2 Course = 20 Participants	4 weeks

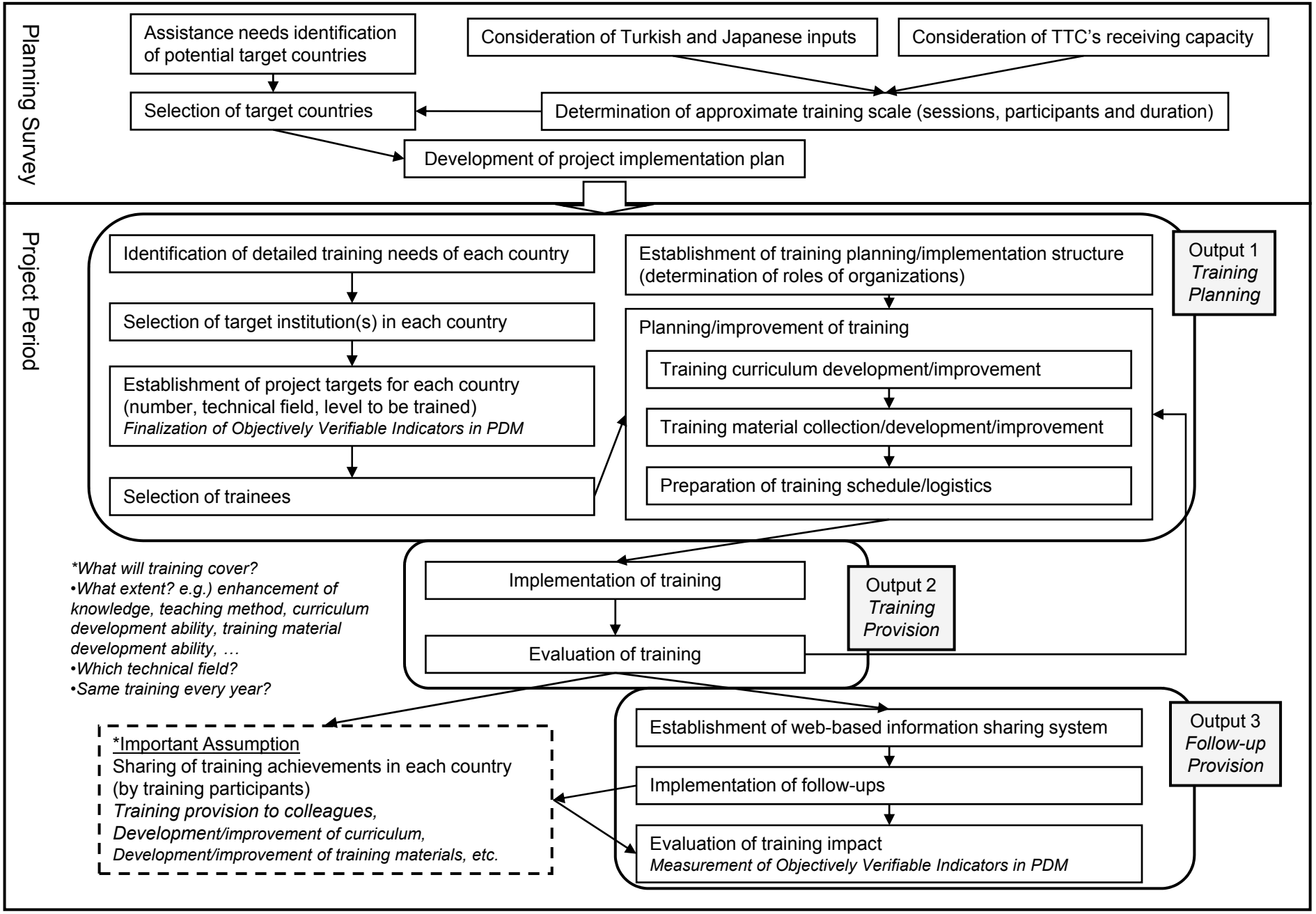
Possible Target Group for the trainees

- Teachers in technical and vocational schools in target countries

Industry Automation Technology (IAT) Extension Project for Central Asian/ Middle East Countries: Chart 1



Industry Automation Technology (IAT) Extension Project for Central Asian/ Middle East Countries: Chart 2



Schedule to Commence the Project

- Nov. 2011: Detailed Planning Survey
  Signing M/M including draft R/D
- Nov. 2011: Signing of R/D
- Dec.2011-Mar.2012: Recruit procedure for
  Japanese Experts
- April.-May 2012: Commencement of the
  Project