

第 6 章 事業所調査の概要

6.1 事業所調査の概要

(1) 調査の目的

調査の目的は、次の 3 点としてまとめることができる。

- ・技能・技術分野にかかる人材についての現状の需給状況と課題の把握。
- ・将来の需給予測を行うための基礎資料の獲得。
- ・対策としての人材開発計画を策定する基礎資料の獲得。

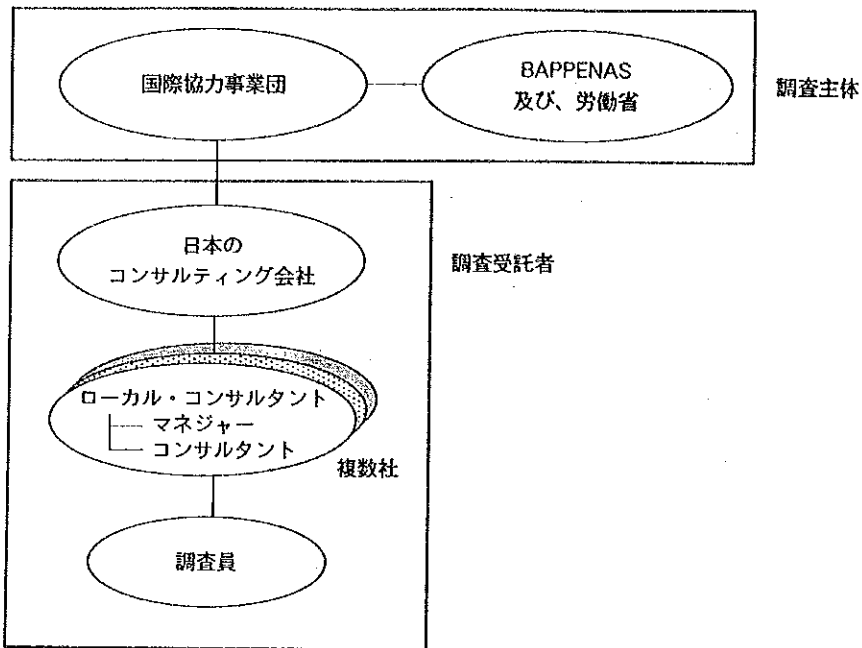
さらに、上記目的は、全体スケジュールに併せて完了し、将来に渡って調査が継続できる基礎として、コンピュータ・システムを含む調査技術および報告書をインドネシア側に移転、提供する。また、将来インドネシアが独自に調査を行えるよう、より少ないコストで効果を上げるよう配慮する。

(2) 調査実施体制（案）

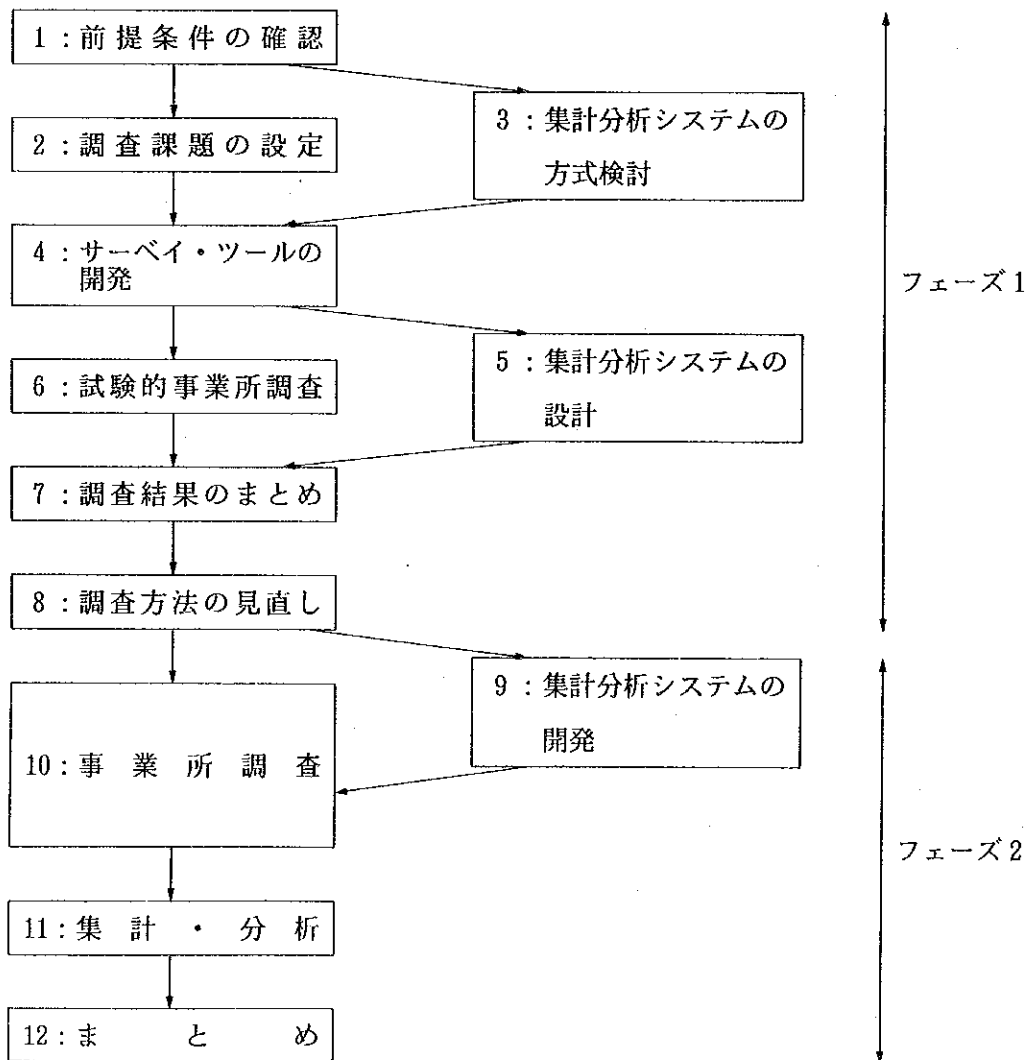
調査体制は、次図のとおりである。調査を受託するのは、本格調査全体を受託している日本のコンサルティング会社の主導の下、ローカル・コンサルティング会社、複数社である。ローカル・コンサルティング会社の数は、調査件数の確定後、決定する。さらに、実際の調査（訪問調査）は、ローカル・コンサルティング会社のコントロールの下で、調査員が行う。

調査員の候補としては、DEPNAKER職員および学生が適当と考えられる。DEPNAKER職員は、訓練センターの職員（人数は未調査）およびインスペクター(1,000人) が考えられる。両者ともに調査員としての資質は十分であるほか、彼ら自身が直接的に地域の需要を知ることができるというメリットがある。インスペクターについては、立入調査の権限がある。そこで、一般にインドネシア企業は情報開示に協力的ではないと言われているため、どうしても調査が滞るようであれば有効かもしれない。しかしながら、その場合、調査を受ける事業所が防衛的になり調査情報の真実性が得にくくなる短所がある。

学生については、社会科学系のシニアレベルの学生であれば、質的にもあまり問題がなく、調査費用も抑さえることができる。また、本調査は、学生の関心を引くことの出来る調査であると考えられる。インドネシアでは、大学はコンサルティング会社を併設しておりそれを經由して、州ごとに雇用するのが得策と考えられる。大学を巻き込むことにより、供給サイドの情報が引き出しやすくなるという相乗効果も考えられる。



(3) 全体作業プロセス (案)



1. 前提条件の確認

- ・ S/W
- ・ 過去の各省庁の労働政策
- ・ 社会的要請
 地域バランス、生活水準の向上
- ・ 国際競争要因
 他国との競争条件
- ・ 既存統計資料と本調査の関係
- ・ 全体労働フローの中での技能・技術者という職能グループの位置付け（過去、将来）
 地域別、産業別の労働フロー（分かる範囲で）
 （緩衝装置としてのインフォーマルセクター含む）
- ・ 開発する需給予測モデルの概要

2. 調査課題の設定

前提条件の確認により、事業所調査の対象とする課題を設定する。たとえば、労働力の質について、「現状は、技能者レベルの労働力が不足しているのではないか。さらに今後、賃金の上昇、あるいは外資系企業参入などにより設備投資が進めば、他の諸国のように技術者といういっそう質の高い労働力が、不足してくるのではないか。」といった課題の設定が必要である。

3. 集計分析システムの方式検討

- ・ 質問表の配布方法、収集・入力方法
- ・ 調査員の教育方法など

4. サーベイ・ツールの開発

- ・ 事業所リストの整理
 基礎とするDEPNAKERの事業所リストに盛られた情報の鮮度については、管理状況を診断し、必要であれば、内容（特に、住所、従業員数、業種分類）の正確性をサンプリングして（試験的事業所調査の一環でも可）調査する。その他、いくつかのセクターについては、中央統計局の事業所リストによりDEPNAKERのリストを補完する。
- ・ 事業所リストの分析、サンプリング、および加工
- ・ 質問表の作成
- ・ ローカル・コンサルタントの選定

5. 集計分析システムの設計

調査ガイド作成、コンピュータ・システムの設計。

6. 試験的事業所調査

サーベイ・ツールが計画どおり機能するか少数の事業所について試験的に調査を行う。また、その調査の間に、地域別、産業別、規模別での典型的な企業像（職制、採用、人事制度、かかえている問題など）を知り、質問項目を調整する。さらに、サンプリング数の最終決定の基礎となる統計量（分散、平均）を得る。

7. 調査結果のまとめ

なお、フェーズⅠでは別途、供給サイドへのヒアリングも行われるため、供給サイドから見た供給と需要の関係も含めた検討が必要。

8. 調査方法の見直し

- ・問題設定、サーベイ・ツール、集計分析システムの見直し。
- ・遅くともこの時期に、調査員の募集開始。

9. 集計分析システムの開発

8の結果を反映して、コンピュータ・システムを準備。

10. 事業所調査

詳細は、次項（4）事業所調査の方法で述べる。初期段階で、調査員の教育などの準備を含む。

11. 集計・分析

入力作業を含む。

12. まとめ

(4) 事業所調査の方法（案）

1. 調査の範囲

調査対象となる事業所は、（1）全国の、（2）全ての企業規模（従業員数）の、（3）特定専門技術分野の技能・技術者を必要とする産業に属するものである。ここで、特定専門技術分野とは、S/Wで締結した専門技術分野（化学、土木、電気、生産工学、機械、冶金、

鉱業・石油、航空、電子、原子力、バイオテクノロジー、情報処理・コンピュータ、建築）に含まれる技術分野である（以下、本章では同様）。

2. 事業所の抽出方法

調査は、DEPNAKERにある事業所リスト（前章参照、14万事業所を所蔵）を母集団（統計的な観察対象とする集団）とする。

調査の範囲にしたがって、地域、企業規模、産業について、バランスのとれた事業所の情報を取得する必要があるため、基本的に事業所の抽出は、それら3要素を層別に分類して、統計的に一定の精度を確保するように、層毎に（層別）サンプリングを行う。なお、日本における調査の場合、地域別較差はあまり考慮されないが、インドネシアの場合は、特に地域特性の違いは重要な要素と考えられる。

地域の区分

事業所リストには、住所があるため区分は自由である。

層別のための分類法としては、27ある県の主要都市圏別、（日帰り圏内）などが考えられる。

規模（従業員数）の区分

事業所リストには、従業員数があるため区分は自由である。

現状では、労働省は労働組合結成の基準である25人を基準に持っており、中央統計局では第4章に述べたように、大規模、中規模、小規模、および、家内の4つの分類を用いている。需給モデルで利用すると考えられる他の経済統計との整合性を考えると、後者、すなわち中央統計局の基準が望ましいと考えられる。

需給モデルの基礎データを得るには、あらゆる従業員数の層の情報を得ることが必要であるが、調査の目的およびコスト効果を考えると大規模な事業所について調査のスポットライトを当てることも必要である。

産業の区分

DEPNAKERの事業所情報には、インドネシアの産業分類（K L U I : 5桁）が掲載されている。

調査対象とする産業は、この産業分類から選ぶことになる。なお、中央統計局も工業統計等においてK L U Iを用いている。S/Wで決定している特定専門技術分野に対応させるといくつかは絞り込むことが可能と考えられる。現段階で分かっている下の9つのセクターのレベルでは絞り込みはできないが、その下のレベルでは可能と考えられる。

DEPNAKERの事業所リスト

国際基準産業分類 (I S I C) . . . 参考

9つのセクター

(K L U Iの大分類)

| | | |
|--------------------|------|---|
| 農業 : AGRICULTURE | ———— | A: AGRICULTURE, HUNTING AND FORESTRY B: FISHING |
| 鉱業 : MINING | ———— | C: MINING AND QUARRYING |
| 工業 : MANUFACTURING | ———— | D: MANUFACTURING |
| 電気 : ELECTRIC | ———— | E: ELECTRICITY, GAS AND WATER SUPPLY |
| 建設 : CONSTRUCTION | ———— | F: CONSTRUCTION |
| 貿易 : TRADE | ———— | G: WHOLESALE AND RETAIL TRADE; REPAIR OF MOTOR VEHICLES, MOTORCYCLES AND PERSONAL AND HOUSEHOLD GOODS H: HOTELS AND RESTAURANTS |
| 通信 : COMMUNICATION | ———— | I: TRANSPORT, STORAGE AND COMMUNICATIONS |
| 金融 : FINANCE | ———— | J: FINANCIAL INTERMEDIATION |
| サービス : SERVICE | ———— | K: REAL ESTATE, RENTING AND BUSINESS L: PUBLIC ADMINISTRATION AND DEFENCE; COMPULSORY SOCIAL SECURITY M: EDUCATION N: HEALTH AND SOCIAL WORK O: OTHER COMMUNITY, SOCIAL AND PERSONAL SERVICE ACTIVITIES P: PRIVATE HOUSEHOLDS WITH EMPLOYED PERSONS Q: EXTRA-TERRITORIAL ORGANIZATIONS AND BODIES |

3. 事業所抽出の試行結果

事前調査の段階でおおよそサンプル数を掴むため、DEPNAKERの事業所情報の地域別、規模別の事業所の数と、事業所抽出の試行結果を次頁に示す。実際のサンプル数は、層別の具体的区分、試験的事業所調査の結果得た回答率の感触や、統計量（平均、分散）を踏まえて確定する。

本格調査では、地域、規模、産業の区分を具体的に決定する初期段階で、事業所の分布を

分析しておく必要がある。事業所の分布は、これら3層の分類次第でかなりの偏りが予想される。場合によっては、調査範囲のコスト効果に見合うような絞り込みが必要な可能性がある。

抽出率は、全体を調整しつつ、規模別に（25人未満、25人以上、50人以上、100人以上）（尚、ここでは試行的にDEPNAKERの規準に合わせたが、本格調査では、中央統計局の規準に合わせるのが望ましい）およそ1%、3%、5%、10%というセットを基本にしている。スラウェシ等の極端に事業所の少ない地域については、各層で2桁、地域全体で3桁のサンプル数をするように抽出率のセットを整数倍した。なお、過去の同種の調査では（'Indonesian Manufacturing Employment and Training' 1993）、抽出率は、20人以上、100人以上、250人以上、500人以上のそれぞれについて3%、10%、25%、100%を用い、回答率は、86%であった。今回も回答率は、80%程度を目標と仮定している。結果的には、全体の抽出率は、3.3%であり、回答率の80%を掛けると2.7%となる。なお日本における事業所調査では、15,000に対し調査票を郵送し、回答率59.3%を得ている（「技能労働者等需給状況調査報告」労働省、1988）。

次頁のサンプリングは、地域（州）は、地域特性を示すため産業パターンにより分類してある。産業パターンは、人口規模（人口密度）と地域所得（単位生産力）の分布から次のように導出している。

表3 地域区別の産業パターンと開発指標

| タイプ | 州 | 特性 | 地域 | 産業パターン の特色 | インフラ ストラクチャ | 1人当たり G D P |
|---------------------------------|---|--|--|----------------------------|----------------|---------------------------------|
| A ジャワ人口稠密型 | ジャカルタ 西ジャワ 中ジャワ ジョクジャカルタ 東ジャワ バリ | 人口稠密 高い生産力 (人口密度 500人～) (GRDP/km ² 400～) | IBB (ジャワ、パリ) | 製造業 + 農業 (食糧農業) | 良好 | 中位 (GRDP/P 600-2,500) |
| B スマトラ 大規模農業型 | 北スマトラ ランポン 西スマトラ 北スラウェシ 西ヌサ・テンガラ 南カリマンタン 南スラウェシ | 人口密度中位 相対的に高い生産力 (人口密度50～ 150人) (GRDP/km ² 50～150) | IBB+IBT (多くはスマトラ、 スラウェシ) | 農業 (エステート 商品作物) | 中位 | 中位 (GRDP/P 500-900) |
| C スマトラ 石油開発型 | アチュー リアウ 南スマトラ 東カリマンタン | 人口密度低位 非常に高い生産力 (人口密度10～60人) (GRDP/km ² 40～150) | IBB (多くはスマトラ) | 石油・ガス、 鉱業が優位 | 良好 (部分的) | 高い水準 (GRDP/P 1,000-5,000) |
| D スラウェシ、 ヌサ・テンガラ 自給農業型 | ベンクル ジャンビ 東南スラウェシ 東ヌサ・テンガラ 東チモール | 人口密度低位 低位の生産力 (人口密度40～70人) (GRDP/km ² 40～150) | IBT (多くはスマトラ、 スラウェシ、 ヌサ・テンガラ) | 農業 (食糧自給農業) | 不備 | 低位 (GRDP/P 300-600) |
| E カリマンタン、 イリアン未開発型 | マルク 西カリマンタン 中スラウェシ 中カリマンタン イリアン・ジャヤ | 非常に低い人口密度 優位の生産力 (人口密度～30人) (GRDP/km ² 50～80) | IBT (多くはカリマン タン、イリアン・ ジャヤ) | 林業 農業 (食糧自給農業) 水産 | 不備 | 低位 (GRDP/P 500-900) |

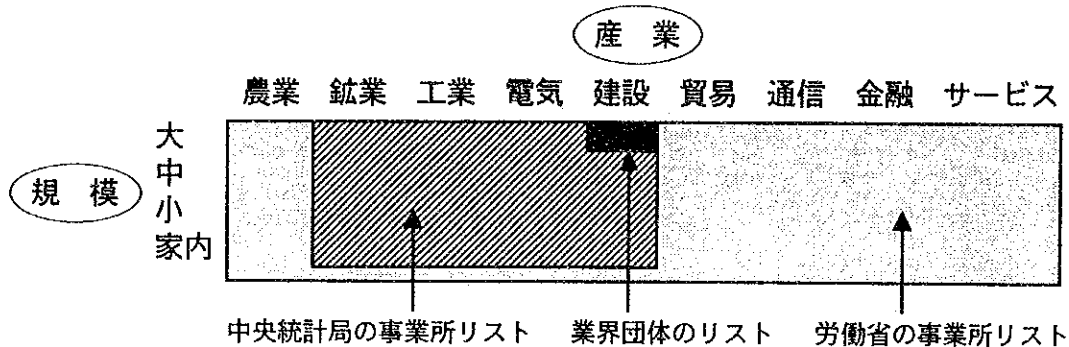
「インドネシアの地域開発と工業化」 井草他 アジア経済研究所 1993より抜粋

地域産業パターン別調査対象範囲とサンプル数

| 地方 産業パターン | 州 | 従業員別 事業所数 (網：調査対象範囲) | | | サ ン プ ル 数 | 抽 出 率 | | | | | | | | |
|-----------------|------------------|-------------------------|-------|-------|-----------------------|-------------|------|------|-------|-------|-----|-----|-----|----|
| | | 合計 | >100 | 50-99 | | 25-49 | >25 | >100 | 50-99 | 25-49 | >25 | | | |
| スマトラ | | 34633 | 2099 | 1824 | 3104 | 27606 | 415 | | | | | | | |
| 農業 (エステート、商品作物) | 北スマトラ、西スマトラ、ランポン | 17516 | 1222 | 1011 | 1641 | 13642 | 222 | 122 | 51 | 49 | 10% | 5% | 3% | |
| 石油/ガス、鉱業 | アチェー、リアウ、南スマトラ | 13421 | 758 | 723 | 1319 | 10621 | 152 | 76 | 36 | 40 | 10% | 5% | 3% | |
| 農業 (自給) | ジャンビ、ベンクル | 3696 | 119 | 96 | 144 | 3343 | 41 | 24 | 9 | 9 | 20% | 10% | 6% | |
| ジャワ | | 80835 | 8211 | 6446 | 9874 | 56304 | 2003 | | | | | | | |
| 製造業、農業 | ジャカルタ | 21063 | 2162 | 1957 | 3081 | 13883 | 544 | 216 | 97 | 92 | 10% | 5% | 3% | 1% |
| 製造業、農業 | 西ジャワ | 18283 | 2538 | 1985 | 2608 | 11152 | 543 | 254 | 99 | 78 | 10% | 5% | 3% | 1% |
| 製造業、農業 | 中ジャワ | 14064 | 989 | 725 | 1389 | 10951 | 286 | 99 | 36 | 42 | 10% | 5% | 3% | 1% |
| 製造業、農業 | ジョクジャカルタ | 4445 | 127 | 159 | 362 | 3737 | 69 | 13 | 8 | 11 | 10% | 5% | 3% | 1% |
| 製造業、農業 | 東ジャワ | 22980 | 2395 | 1840 | 2424 | 16511 | 560 | 240 | 82 | 73 | 10% | 5% | 3% | 1% |
| カリマンタン | | 9923 | 986 | 721 | 994 | 7222 | 329 | | | | | | | |
| 農業 (エステート、商品作物) | 南カリマンタン | 2820 | 283 | 142 | 255 | 2140 | 86 | 57 | 14 | 15 | 20% | 10% | 6% | |
| 石油/ガス、鉱業 | 東カリマンタン | 3589 | 404 | 384 | 376 | 2425 | 142 | 81 | 38 | 23 | 20% | 10% | 6% | |
| 林業、農業 (自給)、水産 | 西カリマンタン、中カリマンタン | 3514 | 299 | 195 | 363 | 2657 | 101 | 60 | 20 | 22 | 20% | 10% | 6% | |
| スラウェシ | | 12739 | 213 | 257 | 661 | 11608 | 216 | | | | | | | |
| 農業 (エステート、商品作物) | 北スラウェシ、南スラウェシ | 9251 | 147 | 154 | 406 | 8544 | 138 | 59 | 31 | 49 | 40% | 20% | 12% | |
| 石油/ガス、鉱業 | 東南スラウェシ | 1543 | 30 | 54 | 128 | 1311 | 38 | 12 | 11 | 15 | 40% | 20% | 12% | |
| 林業、農業 (自給)、水産 | 中スラウェシ | 1945 | 36 | 49 | 127 | 1733 | 39 | 14 | 10 | 15 | 40% | 20% | 12% | |
| その他 | | 8519 | 341 | 369 | 660 | 7149 | 196 | | | | | | | |
| 製造業、農業 | バリ | 2117 | 154 | 197 | 318 | 1438 | 50 | 16 | 10 | 10 | 10% | 5% | 3% | 1% |
| 農業 (エステート、商品作物) | 西ヌサテンガラ | 2114 | 36 | 61 | 132 | 1883 | 43 | 15 | 12 | 16 | 40% | 20% | 12% | |
| 農業 (自給) | 東ヌサテンガラ、東チモール | 1166 | 83 | 31 | 67 | 1035 | 27 | 13 | 6 | 8 | 40% | 20% | 12% | |
| 林業、農業 (自給)、水産 | マルク、イリアンジャヤ | 3122 | 106 | 80 | 143 | 2793 | 76 | 42 | 16 | 17 | 40% | 20% | 12% | |
| 全体合計 | | 146649 | 11850 | 9617 | 15293 | 109889 | 3159 | 1413 | 586 | 583 | 577 | | | |

4. 事業所リストのカバー範囲

DEPNAKER以外の利用可能な事業所リストのカバー範囲は、次のとおりである。カバー範囲が最も高いDEPNAKERの事業所リストを基礎にする。なお、中央統計局も一部の産業で質の高いリストを持っているため、補完に使ってほしいというインドネシア・サイドの意向により、前述のとおり事業所リストの整理段階での検討が必要である。補完の必要性は、DEPNAKERリストの鮮度、DEPNAKERリストとの比較で判断できると考えられる。



(5) 調査内容 (案)

調査の内容としては、次のような項目が考えられる。ただし、小規模の事業所については、

1、2、5および7といった最小限の質問とする（考え方は、後述）。

1. 企業概要

-設立年月、商品、顧客、仕入先

2. 財務計数（過去、将来予測）

-売上、生産高、賃金（上昇率を含む）

-設備投資の計画（→労働の資本化の進展→労働力に対する質的变化）

*DEPNAKER意見：財務計数は、事業所は開示を拒む可能性が高い。資本金くらいなら可能。

3. 人事制度

-昇進・昇格制度、評価制度、ジョブローテーション、キャリアパス

*DEPNAKER意見：制度がしっかりしているのは、大企業のみ。

4. 職場内教育・訓練（技術者、技能者、熟練工を中心として）

-形態（職種別、OJT等）、研修対象者、期間

-特に、技能・技術者が社内で育成されている場合、育成内容およびこれにかかる年限

5. 採用状況（技術者、技能者、熟練工を中心として）

-採用頻度（定期採用、不定期採用）

-職種別、賃金形態別（日雇い、月給）採用人員

-学歴、専門分野、職歴別採用人員

6. 就職までの経緯（Transition Period） *ユド局長が、特に追加を要求した項目。

7. 退職状況

-要因別（新規設備導入、定年、転職等）退職者数

8. 技能・技術者の需給状況（職種別、採用基準別）

9. 政府の政策の認知度

-教育制度、訓練制度への評価

10. 現状の課題

-企業からみて技能・技術者の何が不足か（たとえば、職種別の技能・技術者の質および人数）

-将来的な技術革新、設備投資の方向性と技能・技術者に対する教育訓練のあり方

-外資系企業（多国籍企業）については、他国との生産性の比較（強み・弱み）

11. 現状の課題への対応するための計画

-技能・技術者の不足（質・量）を充足するために取っている手立てなど

2つのレベルの調査：小事業所と大事業所で調査方法と内容に柔軟性を持たせる

各層の事業所からは、全国的な予想の可能な需給モデルへの資料とするため、一義的には、同等の情報を得る必要がある。しかしながら、地域、産業レベルの問題の把握、将来必要となる人材の動向といった情報の獲得という別の目的のためには、比較的規模の大きな事業所の方が情報の質、量ともに多く、より将来の見通しにも役立つ情報が得られると考えられる。

したがって調査内容や方法は、2つに分けて行うべきと考えられる。

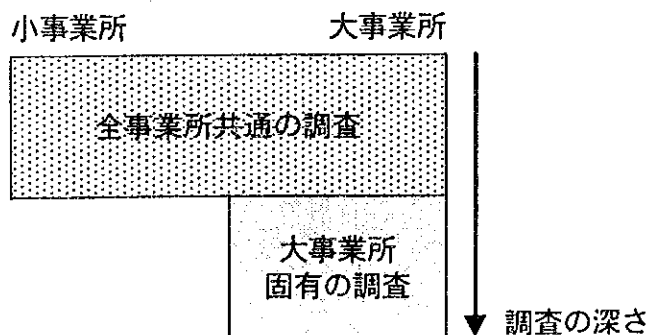
- ・比較的規模の小さい事業所（以下、小事業所と呼ぶ）

簡単で必要最低限の調査内容とする。訪問回数も最高2回程度で行う。

- ・比較的規模の大きい事業所（以下、大事業所と呼ぶ）

小事業における調査内容を含み、それに加えて将来の事業の動向、地域産業の発展動向、問題点、サポーター産業との関係といった質の高い調査内容とする。訪問回数も3回程度かけておこなう。

大小の区分をどこに引くかは、今後の労働省の事業所リストの分布の分析、および調査コスト効果に依存する。



(6) 今後の調査における留意点

① 職業名（タイトル）への配慮

職業のタイトルは、事業所によりいろいろな呼び名があるはずであるから、特定技術専門分野で表わされるような職業を含むよう配慮が必要である。

② 対象職業分類

本件調査において「人材養成計画」策定の対象となるのはあくまでも「技術者」及び「技能者」であるが、特に技能者について、現場の企業レベルでは下位の職能レベルの人材を企業内教育・訓練により技能者として育成している傾向があるため、事業所調査においては上記2職業分類に加えて「熟練工」（Skilled Workers）もその対象に加えることとし、技能者の供給モデルを作成する上でも、熟練工から技能者になるという職業経路についても配慮することが必要である。

また、技術者、技能者の定義についても、学歴のみならず、その「能力」により表すことが望ましい（本報告書第3章参照）。

③ 調査実施体制

事業所調査は、その規模も大きく、対象地域も広範に亘るため、ローカルコンサルタントを活用して行うことになるが、複数の会社の多人数を調査員として利用することが必要となること、また短期間に効率かつ有効な調査を実施することが必要となるので、特に調査員に対する教育には十分な時間をかけること。またそのために、「試験的事業所調査」において想定される問題を洗い出し、その整理、対応策の準備を行っておくことが必要となる。

④ 「就職までの経緯」について

前述の事業所調査質問項目例で示したもののうち「就職までの経緯」については、特にDEPNAKERユド局長の強い要望があった項目であり、具体的には、高学歴保有労働者のジョブ・ホッピングや適当な職が見つかるまで待機するという現象に関連して、調査対象となった技能・技術者が現職に到達するまでどのような経路（転職、復学、失業など）をたどったかについて聴取し、こうした問題の背景にあるものをさぐろうとするものである。

この項目については、訪問企業においてさらに対象者を抽出して詳細な聞き取りを行うことにより対応することが求められる。

⑤ DEPNAKERの地方事務所へのヒアリング

試験的事業所の段階において実際に事業所をまわっている各地方事務所のインスペクターなど職員に、事業所情報の入手の困難さの程度などをヒアリングをすることは、有効と考えられる。

尚、事業所調査実施にあたっては予備調査M/Mで確認してあり、対象企業に対しインドネシア側より事前に紹介のレターを発出してもらうこと。

⑥ 統計上の位置付け

継続的な統計とするためには、全体の統計体系における位置づけを明確にしておくことが有益と考えられる。

6.2 事業所調査関連ローカル・コンサルタント

(1) INKINDOについて

INKINDO とは、インドネシアのコンサルティング会社の業界団体であり、INKINDO 全国代表からの情報によると、政府関係の仕事をするためには、当団体への加入が必要である。INKINDO 加入の企業リストは、入手済みの一覧表の他、個別の会社を紹介した本を入手済み。

(2) 現時点で推薦の得られたローカル・コンサルタント

現時点では、委託調査範囲が明示できないため、個別のローカル・コンサルタントにあたることはせず、現地での調査経験のある人からの推薦を得た。推薦の前提としては、全国規模の事業所調査についてのリサーチ・アシスタンスのできるコンサルティング会社とした。コンサルティング会社の一覧は、次頁のとおり。

なお、推薦者は、次のとおり。

世銀プロジェクトのリーダー (Mr. BAS. BENGOTEKU)

過去に使ったことがあるとして3社を推薦。選定にあたっての手順としては、評判をもとにしてILOサイドでいくつかの候補を決め、ILO、UNDPの承認後、当該政府の決裁を受けたとのことであった。

INKINDOジャカルタ代表の推薦

ジャカルタ・ベースの8社を推薦。ジャカルタ以外に本拠のあるコンサルティング会社については、INKINDO の各プロビンス代表に聞くことができる旨を聴取している。しかしながら、全体コントロールの意味からは、ジャカルタ・ベースの会社の方が良いのではないかとのコメントであった。

本事前調査団関係者

佐藤氏の現地経験から6社および監査法人トーマツの現地提携先の推薦5社。

(3) レベル判断および調査費用について

INKINDO に加入している企業については、所属する人材の経験と学歴による評価情報(BAPP-ENAS基準、A-E) および過去のプロジェクト情報がある(資料入手済)。さらにコンサルタントの1ヶ月あたりの単価についても、BAPPENASの基準によることができる。

(4) ローカル・コンサルタントへのヒアリング記録

ローカル・コンサルタントの質と調査のフィージビリティを握むため、推薦を受けた中から特色の異なる2つのコンサルティング会社を選び(前頁リスト上は、網かけ部分)、個別に訪問し、ヒアリングを行った。

両社ともに調査への参加意欲は強く、代表者は少なくとも調査経験、現地の事業所の状況把握という点から問題はないと見られた。

1. LEMBAGA MANAGEMENT

この会社は、インドネシア大学の付属機関である。州立大学とのネットワークを活用し、規模の大きな調査への対応が可能。学生アルバイト募集においては、質の高い学生選択のために有利な立場にある。

(主要なヒアリングメモ)

・エンジニアについて

大卒はホワイトカラー指向が強いのが問題。先日、森林関係の職場で新卒エンジニア1,000人雇用したが1年以内に全員が辞めたという話を聞いた。これは仕事の内容への失望が原因で、賃金の問題ではない。また、エンジニアはかなり金融業などへ流れてしまうのが実情。

・大学組織と調査負担能力

インドネシア大学には、同社の他に、Lembaga Demographic, Economicといった部門があるが協力体制がとれる。全国レベルで1,000社程度までなら調査は可能。

・大学生アルバイト

調査には、シニア・レベルの学生が適当。調査時の服装など態度については、教育すれば問題なし。

(ヒアリング先)

- ・ Mr. Heru Sutojo, SE, MSc, Director
- ・ Mr. Toto Pranto, Consulting and Publication Staff

2. REDECON PT.

この会社は、民間の会社である。理論面では弱いという意見も聞かれたが(DEPNAKER)、少なくとも面接においては、英語にも問題はなく、過去に同種の調査を経験していること、規模が大きく国内の他のコンサルティング会社とのネットワークが強みであり、調査委託には問題はないとみられた。

(主要なヒアリングメモ)

・過去の調査実績

DEPNAKERの仕事を受けた。3地域を3-4ヶ月かけて調査。この際同社は、DEPNAKERの Education & Training Sestionの人を雇用した。調査員が1地域10-15人で、1人6-10社を担当。4年前の水準で35千ルピア/1社だった。

調査に先だって各地で、産業組合ごとのミーティングを持ったが、その後の調査がしやすくなった。インスペクターを調査に使うと会社が情報開示に難色を示しやすくなる。

・人材育成について

一般にインドネシア企業は、利益が出ると人材育成より設備投資の方にまわす。DEPNAKERは、設備に合わせて雇いなおすことになる。訓練を社内でやるのは少数の会社。

解雇された労働者は、社外で再教育を受けることになるが、そのときに訓練所の設備が古いことが問題。

・大学生アルバイト

話し方、服装が問題で、調査がフォーマルに見えなくなるので避けた方が良い。

(ヒアリング先)

- ・ Drs. Subandrio Moechdi, SE
- ・ Mr. Joylmanputhra, Business Development Manager

推薦を得ているコンサルティング会社

| | 企業名 (ABC順) | Tel. | 住 所 | コンタクト先 | 規模 (TDR) | BE | IN | SA | HT | INKI NDO 加入 |
|--------|---|---------------------------|---|------------------------------------|-------------|----|----|----|----|-------------------|
| 1 | Binaman Utama PT | 375309 | Jl. Menteng Paya No.9 | Fahai Mu'thi | B | | | | ○ | ○ |
| 2 | Data Consult Sudhi Karsa PT | 343298-37641 | Jl. Kramat Raya No.5-L | Ir. Sulaeman Krisnandhi, MSc | B | | | ○ | | ○ |
| 3 | Finacode Int. & Ass. PT | 326210-337594 | Jl. Cikini J11 No.3 Jakarta Pusat (10330) | Drs. Lukman F. Wokoginta | A | | ○ | | | ○ |
| 4 | Hans Tuanakotta & Mustofa | 3861879-3802955 | Wisma Antara Lt. 12, Merdeka Selkatan 17 | Drs. Hans Kartikahadi | A | | | | ○ | ○ |
| 5 | Indo Consult PT | 7393631 | Jl. Adityawarman No.42 | Soemamo Soedarsono | A | | | ○ | | ○ |
| 6 | Indulexco PT | 353265-353268- 3805228 | Jl. Abdul Muis No.42 Jakarta Pusat | K. Sindhunatha, SH | A | | ○ | | | ○ |
| 7 | Insan Selaras Konsultama PT | 8093533 | Jl. SWAKIV No.24 Cililitan Jakarta Timur(13640) | DR. Ir. Didik J. Pachbini, MSc. | A | | ○ | | | ○ |
| 8 | Intermatrix Bina Indonesia PT | 5207538-5207540 | Setiabudi Building, Lt. 4 Blok-B, Jl. H. R. Rasuna Said Jakarta Selatan | Ir. Agus Pambagio | A | | ○ | | | ○ |
| 9 | Intersys Kelola Naju PT | 7992923 | Jl. Kalibata Utara 11, No.78 Pasar Mingge | Ny. Herty Permana | A | ○ | | | | ○ |
| 10 | Kogas Driyap Konsultan PT | 7221583 | Jl. Wijaya XIII/24, Kebayoran Baru, Jakarta | Ir. Subandriyo | A | ○ | | | | ○ |
| 11 | Lembaga Management (Indonesia University) | 334142, 3907410 | Jl Salemba 4 | Heru Sutojo, SE, Msc. | | | | | ○ | |
| 12 | Nas Associates (CIC Group) | 322720 | Jl. Raden Saich No.58 | Subarto Zaini | B | | | ○ | | ○ |
| 13 | Price Waterhouse Indonesia Kons PT | 513516-513518 | Ficorinvest Building Lt. 4 | Kemal Stamboel | A | | | ○ | ○ | ○ |
| 14 | Redecon PT | 510215-511821- 511824 | Gedung PATRA JASA Jl. Gatot Subroto Kav. 32-34 Jakarta Selatan (12950) | Ismid Hadad, MPA | A | | ○ | ○ | ○ | ○ |
| 15 | Research and Documentation Center for Manpower & Development | 516490, 5212881 | Jl Gatoto Subroto, Gedung YTKI, Jakarta | Mr. Wiladi Budiharga | | ○ | | | | |
| 16 | Sarana Antamusa Perekayasa PT | 7981786-7982762 | Jl. Raya Pasarminggu No.16 Pancoran, Jakarta Selatan | R. W. Hadjiwibowo | A | | ○ | | | ○ |
| 17 | Surindo Data Utama PT | 7973782-7973783 | Jl. Raya Pasarminggu No.6 Jakarta Selatan(12720) | Dra. Yanti B. Hadjiwibowo | C | | ○ | | | ○ |
| 18 | SGV Utomo | 584030-3934 | Jl. Jend. Sudirman Kav. 21 Chase Plaza | Drs. Budiman Elkana | A | | | ○ | | ○ |
| 19 | Unisystem Utama | 3806876-3806900 | Jl. H. Pachrudin Kav. 11-13 Jakarta Pusat(10250) | Djoko Aminoto, Msc. | A | | ○ | | | ○ |
| 略 称 | | | | | | | | | | |
| | BE: Mr. Bengoteku | | | TDR: 政府基準 | | | | | | |
| | IN: INKINDO Jakarta | | | A: 大 | | | | | | |
| | SA: 佐藤氏 | | | B: 中 | | | | | | |
| | HT: HTM (監査法人トーマツ の現地提携先) | | | C: 小 | | | | | | |

付属資料

1. 事前調査（予備）時のM/M
2. S/W
3. 事前調査（S/W協議）時のM/M
4. 要請書（T/R）
5. 質問状回答
6. 収集資料リスト

1. 事前調査（予備）時のM/M

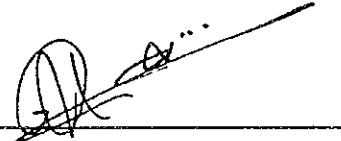
MINUTES OF MEETINGS
FOR
THE PREPARATORY STUDY
FOR
THE STUDY OF ENGINEERING MANPOWER DEVELOPMENT PLANNING
IN
THE REPUBLIC OF INDONESIA

AGREED UPON BETWEEN
NATIONAL DEVELOPMENT PLANNING AGENCY (BAPPENAS)
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

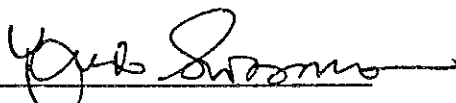
SEPTEMBER 29, 1993
JAKARTA, INDONESIA



MR. A. A. MACHRANJ
BUREAU HEAD
BUREAU OF MANPOWER AND
JOB OPPORTUNITY DEVELOPMENT
NATIONAL DEVELOPMENT PLANNING
AGENCY (BAPPENAS)



MR. KASAI AKIRA
LEADER
PREPARATORY STUDY TEAM
JAPAN INTERNATIONAL
COOPERATION AGENCY



DR. YUDO SWASONO
DIRECTOR
DIRECTORATE OF LABOUR MARKET
INFORMATION AND MANPOWER PLANNING
DIRECTORATE GENERAL OF MANPOWER
DEVELOPMENT AND UTILIZATION
MINISTRY OF MANPOWER

In response to a request of the Government of the Republic of Indonesia, the Government of Japan dispatched the Preparatory Study Team (hereinafter referred to as "the Team") for the Study of Engineering Manpower Development Planning in the Republic of Indonesia (hereinafter referred to as "the Study"), from September 19 to September 29, 1993, to confirm the background and contents of the Study through discussions with the Indonesian side.

The Team had a series of discussions with the officials concerned of the National Development Planning Agency (hereinafter referred to as "BAPPENAS") and the Ministry of Manpower (hereinafter referred to as "DEPNAKER") between September 20 to September 28, 1993. The list of attendants is attached as Annex II.

This document is to summarize the main results of the said discussions as follows.

1. TITLE OF THE STUDY

Based on the proposition from the Team, both sides agreed to designate the Study as "the Study of Engineering Manpower Development Planning in the Republic of Indonesia".

2. COUNTERPART BODY TO THE STUDY

The Team proposed that a steering committee composed of BAPPENAS, DEPNAKER, Ministry of Education and Culture, Ministry of Industry and BPPT be set up as a counterpart body to the Study, while designating BAPPENAS as a chief counterpart.

Indonesian side stated its intention that only BAPPENAS and DEPNAKER be involved as counterparts to the Study, and that other agencies may be called in at ad hoc basis. Indonesian side also proposed that at such occasions when major reports of the Study are presented, "seminars" be held by BAPPENAS inviting all related agencies including those listed above for the purpose of disseminating study progress and obtaining comments from them.

The Team agreed on the composition of the counterpart body and on the holding of "seminars" at the time of Interim Report (I) and Draft Final Report presentation.

Both sides confirmed that BAPPENAS will represent the Indonesian side with regard to the Study.

3. TARGET YEAR OF THE STUDY

The Team proposed to set the target year of the Study at 2008/2009 with 15 years of time span.

Indonesian side requested that the target year be extended to the year 2018/2019, in line with that of 2nd 25 year long-term development program currently under preparation.

Both sides agreed that long-term target year of the Study will be set at 2018/2019, while the medium-term target year will be set at 2003/2004.

Both sides also agreed that the projection figures and planning for the engineering manpower after medium-term target year will only indicate rough directions.

4. OBJECTIVE AND COMPONENTS OF THE STUDY

Both sides agreed on the objective and components of the Study as follows.

The objective of the Study is to undertake an engineering manpower development planning of the Republic of Indonesia, based on the estimation and projection of present and future (target year 2018/2019) demand and supply conditions of engineering manpower by engineering specialization and occupational classification.

The Study consists of the following components;

- Data and information collection/review/analysis,
- Conduct of field surveys,
- Projection of future demand/supply conditions of engineering manpower, and
- Undertaking of engineering manpower development planning.

5. STUDY AREA

(1) Engineering Specializations

Both sides agreed that the engineering specializations covered by the Study will be those in the following fields;

chemical, civil, electrical, industrial, mechanical, metallurgical, mining & petroleum, aeronautical, electronic, nuclear, biotechnological, information & computer and architecture.

(2) Occupational Classifications

The Team presented 3 (three) occupational classifications based on the description of the official project request from the Government of the Republic of Indonesia, but at the same time asked the possibility of the inclusion of "engineering technologists" as a part of "engineers" based on the classification of ILO's ISCO (International Standard Classification of Occupation).

Indonesian side agreed on this point, and thus the occupational classifications covered by the Study are set as follows;

Engineers, including Engineering Technologists, and Technicians.

Both sides also agreed that in identifying engineers and technicians working in enterprises, their skill/technology levels obtained through occupational training and education, and experience as well as their formal educational background will be taken into consideration.

6. SCOPE OF THE STUDY

As a result of discussions, the scope of the Study is set as follows.

A. Phase I: Data and Information Collection/Review/Analysis and Preparation of Enterprise Manpower Survey

1. Collection, review and analysis of relevant existing data and information, and consultation/interview with relevant individuals/organizations, covering such fields as;
 - (1) macro economy,
 - (2) industrial structure,
 - (3) national policies in education, science and technology, and industrial sectors,

- (4) national development plans,
- (5) labour market situation,
- (6) education and technical training system,
- (7) labour and education administration, and
- (8) skill/technology level.

2. Design and conduct of pre-test enterprise manpower survey.

3. Analysis of pre-test enterprise manpower survey results and design of full-scale enterprise manpower survey.

B. Phase II : Conduct of Field Surveys, Projection of Future Demand/Supply Conditions of Engineering Manpower and Undertaking of Engineering Manpower Development Planning

1. Conduct of field surveys.

(1) Conduct of full-scale enterprise manpower survey (by sampling).

(2) Survey of existing supply sources of engineering manpower, from universities, polytechnics, secondary schools, public/private vocational training institutes and other channels, including training within enterprise.

2. Projection of future demand/supply conditions of engineering manpower.

(1) Estimation of current stock of engineering manpower in the country.

(2) Development of future (medium and long-term) socio-economic, industrial and physical development framework.

(3) Development of a model for projecting future demand and supply

conditions of engineering manpower.

(4) Projection of medium and long-term demand and supply conditions of engineering manpower and evaluation of the demand/supply gaps.

3. Undertaking of engineering manpower development planning

(1) Examination of experiences of other countries with respect to the development of engineering manpower (their policies, institutional measures and skill/technology level, etc.).

(2) Identification of problem issues of engineering manpower development, based on the examination of future development scenarios and demand/supply gaps.

(3) Establishment of policies and strategies for engineering manpower development.

(4) Formulation of necessary measures for engineering manpower development.

4. Conclusion.

Other items discussed in connection with the "Scope of the Study" are as follows.

(1) Enterprise Manpower Survey

The Team requested the Indonesian side to accord official status to the enterprise manpower survey in order to obtain better cooperation from the respondents, so that the quality of answers will be improved.

Indonesian side agreed on this point and promised to send out official letters in the name of BAPPENAS/DEPNAKER to the enterprises in advance.

Enterprises to be surveyed will be decided in the course of Phase I of the Study through discussions between the Japanese Study Team and the Indonesian side.

Workers engaged in production processes as well as engineers and technicians will be surveyed.

Target enterprises of the survey are mainly private enterprises and state owned companies, while those engineering manpower employed in the public sector (especially in R & D field) will be surveyed using existing statistical data and information.

(2) Career Background of Engineering Manpower

Indonesian side requested that the information regarding career background of engineering manpower before their present employment be also collected through the engineering manpower survey.

The Team stated that the issue will be considered in the survey.

(3) Examination of Other Countries' Experience

In response to the question from the Team asking which countries are thought to be appropriate for this part of the Study, Indonesian side listed such countries as Malaysia, Thailand, Taiwan, Republic of Korea and Japan as example.

Final selection will be made during the Phase I of the Study, choosing 2 (two) to 3 (three) countries from among those listed above.

7. Tentative Study Schedule and Reports

Both sides agreed that the study period will last about 18 (eighteen) months as shown in the attached "Tentative Study Schedule" (Annex I).

Kinds of reports and their timing of production are also shown in the Annex I.

8. Signatory of Scope of Work

Both sides agreed that the signatories of the Scope of Work on the Indonesian side will be Mr. A. A. Machrany, Head of the Bureau of Manpower and Job Opportunity Development, BAPPENAS, and Dr. Yudo Swasono, Director of Labour Market Information and Manpower Planning, Directorate General of Manpower Development and Utilization, DEPNAKER.

9. Provision of Counterparts and Office Space

Indonesian side expressed its readiness to provide counterpart staff and office space through DEPNAKER for the Japanese Study Team.

The Team appreciated the readiness of the Indonesian side and asked that such will be duly accorded to the Japanese Study Team.

TENTATIVE STUDY SCHEDULE

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | |
|---------------------|------|---|---|---------|---|---|---|---|---|----|----|----------|----|----|----|---------|----|-----|--|
| ← Phase I → | | | | | | | | | | | | | | | | | | | |
| ← Phase II → | | | | | | | | | | | | | | | | | | | |
| WORK IN INDONESIA | | | | | | | | | | | | | | | | | | | |
| WORK IN JAPAN | | | | | | | | | | | | | | | | | | | |
| REPORT PRESENTATION | △ | | | △ | | | | | | | | △ | | | | △ | | △ | |
| | IC/R | | | IT/R(I) | | | | | | | | IT/R(II) | | | | DF/R | | F/R | |
| | | | | SEMINAR | | | | | | | | | | | | SEMINAR | | | |

IC/R: INCEPTION REPORT DF/R: DRAFT FINAL REPORT

IT/R: INTERIM REPORT F/R: FINAL REPORT

THE LIST OF ATTENDANTSINDONESIAN SIDE

| | |
|--------------------|--|
| Mr. A. A. Machrany | Head, Bureau of Manpower and Job Opportunity Development, BAPPENAS |
| Dr. Yudo Swasono | Director of Labour Market Information and Manpower Planning, Directorate General of Manpower Development and Utilization, DEPNAKER |
| Mr. Godang Sinaga | Staff, Directorate of Labour Market Information and Manpower Planning, |
| Mr. Dafrizal | Directorate General of Manpower Development and Utilization, DEPNAKER |
| Mr. I Wayan Oka | |
| Mr. Maruli | |

JAPANESE SIDE

| | |
|----------------------|--|
| Mr. Kasai Akira | Team Leader, JICA Preparatory Study Team |
| Mr. Hagino Mitsuru | Team Member, JICA Preparatory Study Team |
| Ms. Sato Yuri | Team Member, JICA Preparatory Study Team |
| Ms. Akizawa Hikari | Team Member, JICA Preparatory Study Team |
| Mr. Hanatani Atsushi | Team Member, JICA Preparatory Study Team |

OBSERVERS

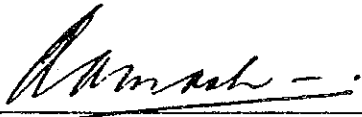
| | |
|---------------------|-----------------------|
| Mr. Sakata Tetsuo | JICA Expert, DEPNAKER |
| Mr. Takata Hirohiko | JICA Indonesia Office |

2. S/W

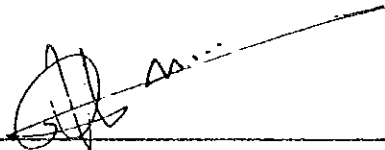
SCOPE OF WORK
FOR
THE STUDY
OF
ENGINEERING MANPOWER DEVELOPMENT PLANNING
IN
THE REPUBLIC OF INDONESIA

AGREED UPON BETWEEN
NATIONAL DEVELOPMENT PLANNING AGENCY
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

DECEMBER 7, 1993
JAKARTA, INDONESIA



A. A. MACHRANY
BUREAU HEAD
BUREAU OF MANPOWER AND
JOB OPPORTUNITY DEVELOPMENT
NATIONAL DEVELOPMENT
PLANNING AGENCY (BAPPENAS)



KASAI AKIRA
LEADER
PREPARATORY STUDY TEAM
JAPAN INTERNATIONAL
COOPERATION AGENCY



YUDO SWASONO
HEAD
PLANNING AND DEVELOPMENT
BOARD
MINISTRY OF MANPOWER
(DEPNAKER)

I. INTRODUCTION

In response to the request of the Government of the Republic of Indonesia, the Government of Japan has decided to conduct the Study of Engineering Manpower Development Planning in the Republic of Indonesia (hereinafter referred to as "the Study") in accordance with the relevant laws and regulations in force in Japan.

Accordingly, Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of technical cooperation programmes of the Government of Japan, will undertake the Study in close cooperation with the authorities concerned of the Government of the Republic of Indonesia.

The present document sets forth the Scope of Work with regard to the Study.

II. OBJECTIVE AND COMPONENTS OF THE STUDY

The objective of the Study is to undertake an engineering manpower development planning of the Republic of Indonesia, based on the estimation and projection of present and future (target year 2018/2019) demand and supply conditions of engineering manpower by engineering specialization and occupational classification.

The Study consists of the following components;

- Data and information collection/review/analysis,
- Conduct of field surveys,
- Projection of future demand/supply conditions of engineering manpower, and
- Undertaking of engineering manpower development planning.

III. STUDY AREA

1. Engineering specializations covered by the Study are those in the following fields;
chemical, civil, electrical, industrial, mechanical, metallurgical, mining & petroleum, aeronautical, electronic, nuclear,

biotechnological, information & computer and architecture.

2. Occupational classifications covered by the Study are engineers (including engineering technologists) and technicians.

IV. SCOPE OF THE STUDY

In order to achieve the objectives mentioned above, the Study covers the following items;

A. Phase I: Data and Information Collection/Review/Analysis and Preparation of Enterprise Manpower Survey

1. Collection, review and analysis of relevant existing data and information, and consultation/interview with relevant individuals/organizations, covering such fields as;

- (1) macro economy,
- (2) industrial structure,
- (3) national policies in education, science and technology, and industrial sectors,
- (4) national development plans,
- (5) labour market situation,
- (6) education and technical training system,
- (7) labour and education administration, and
- (8) skill/technology level.

2. Design and conduct of pre-test enterprise manpower survey
3. Analysis of pre-test enterprise manpower survey results and design of full-scale enterprise manpower survey

B. Phase II: Conduct of Field Surveys, Projection of Future Demand/Supply Conditions of Engineering Manpower and Undertaking of Engineering Manpower Development Planning

1. Conduct of field surveys

- (1) Conduct of full-scale enterprise manpower survey

- (2) Survey of existing supply sources of engineering manpower, from universities, polytechnics, public/private vocational training institutes and other channels, including training within enterprise
2. Projection of future demand/supply conditions of engineering manpower
 - (1) Estimation of current stock of engineering manpower in the country
 - (2) Development of future (medium and long-term) socio-economic, industrial and physical development framework
 - (3) Development of a model for projecting future demand and supply conditions of engineering manpower
 - (4) Projection of medium and long-term demand and supply conditions of engineering manpower and evaluation of the demand/supply gaps
 3. Undertaking of engineering manpower development planning
 - (1) Examination of experiences of other countries with respect to the development of engineering manpower (their policies, institutional measures, and skill/technology level, etc.)
 - (2) Identification of problem issues of engineering manpower development, based on the examination of future development scenarios and demand/supply gaps
 - (3) Establishment of policies and strategies for engineering manpower development
 - (4) Formulation of necessary measures for engineering manpower development
 4. Conclusion

V. STUDY SCHEDULE

The Study will be carried out in accordance with the attached tentative study schedule.

VI. REPORTS

JICA shall prepare and submit the following reports in English to the Government of the Republic of Indonesia.

(1) INCEPTION REPORT

Thirty(30) copies at the beginning of the Study in the Republic of Indonesia.

(2) INTERIM REPORT (I)

Thirty(30) copies within four(4) months after the beginning of the Study.

(3) INTERIM REPORT (II)

Thirty(30) copies within eleven(11) months after the beginning of the Study.

(4) DRAFT FINAL REPORT

Thirty(30) copies within sixteen(16) months after the beginning of the Study.

(5) FINAL REPORT

Fifty(50) copies within one(1) month after the receipt of the written comments on the Draft Final Report from the Government of the Republic of Indonesia, which is expected to deliver such comments to JICA within thirty(30) days after the receipt of the Draft Final Report.

VII. UNDERTAKING OF THE GOVERNMENT OF THE REPUBLIC OF INDONESIA

1. To facilitate smooth conduct of the Study, the Government of the Republic of Indonesia shall take necessary measures:

(1) to secure the safety of the Japanese study team;

(2) to permit the members of the Japanese study team to enter, leave and sojourn in the Republic of Indonesia for the duration of their assignment therein, and exempt them from foreign registration requirements and consular fees;

(3) to exempt the members of the Japanese study team from taxes, duties, fees and other charges on equipment, machinery and other materials brought into the Republic of Indonesia for the conduct of the Study;

(4) to exempt the members of the Japanese study team from income tax and charges of any kind imposed on or in connection with any emoluments or allowance paid to the

members of the Japanese study team for their services in connection with the implementation of the Study;

- (5) to provide necessary facilities to the Japanese study team for the remittance as well as utilization of funds introduced into the Republic of Indonesia from Japan in connection with the implementation of the Study;
 - (6) to secure permission for entry into private properties and restricted areas for the implementation of the Study;
 - (7) to secure permission for the Japanese study team to take all data and documents including maps and photographs related to the Study out of the Republic of Indonesia; and
 - (8) to arrange medical services as needed. Its expense will be chargeable on the members of the Japanese study team.
2. The Government of the Republic of Indonesia shall bear claims, if any arises, against the members of the Japanese study team resulting from, occurring in the course of, or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the members of the Japanese study team.
3. National Development Planning Agency (hereinafter referred to as "BAPPENAS") together with Ministry of Manpower (hereinafter referred to as "DEPNAKER"), shall act as a counterpart agency to the Japanese study team and also as a coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.
4. BAPPENAS/DEPNAKER shall, at its own expense, provide the Japanese study team with the followings, in cooperation with other organizations concerned;
- (1) available data and information related to the Study,
 - (2) counterpart personnel,
 - (3) suitable office space with necessary equipment in Jakarta,
 - (4) credentials or identification cards, and
 - (5) vehicles with drivers necessary for the implementation of the Study.

VIII. UNDERTAKING OF JICA

For the implementation of the Study, JICA will take following measures;

- 1) to dispatch, at its own expense, the study team to the Republic of Indonesia, and
- 2) to pursue technology transfer to the Indonesian counterpart personnel in the course of the Study.

IX. CONSULTATION

JICA and BAPPENAS/DEPNAKER shall consult with each other in respect of any matter that may arise from or in connection with the Study.

ANNEX I

TENTATIVE STUDY SCHEDULE

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | |
|---------------------|-------------|---|---|---------|---|--------------|---|---|---|----|----|----|----|----|----|----|---------|---------|-----|
| WORK IN INDONESIA | | | | | | | | | | | | | | | | | | | |
| | ← Phase I → | | | | | ← Phase II → | | | | | | | | | | | | | |
| WORK IN JAPAN | | | | | | | | | | | | | | | | | | | |
| REPORT PRESENTATION | △ | | | △ | | | | | | | | | | | | | △ | △ | △ |
| | IC/R | | | IT/R(I) | | | | | | | | | | | | | DF/R | DF/R | F/R |
| | | | | SEMINAR | | | | | | | | | | | | | SEMINAR | SEMINAR | |

IC/R: INCEPTION REPORT DF/R: DRAFT FINAL REPORT

IT/R: INTERIM REPORT F/R: FINAL REPORT

3. 事前調査 (S/W協議) 時の M/M

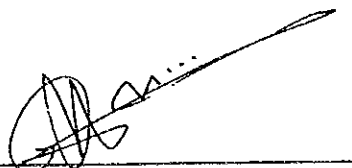
MINUTES OF MEETINGS
FOR
THE SCOPE OF WORK
FOR
THE STUDY
OF
ENGINEERING MANPOWER DEVELOPMENT PLANNING
IN
THE REPUBLIC OF INDONESIA

AGREED UPON BETWEEN
NATIONAL DEVELOPMENT PLANNING AGENCY
AND
JAPAN INTERNATIONAL COOPERATION AGENCY


DECEMBER 7, 1993
JAKARTA, INDONESIA



A. A. MACHRANY
BUREAU HEAD
BUREAU OF MANPOWER AND
JOB OPPORTUNITY DEVELOPMENT
NATIONAL DEVELOPMENT
PLANNING AGENCY (BAPPENAS)



KASAI AKIRA
LEADER
PREPARATORY STUDY TEAM
JAPAN INTERNATIONAL
COOPERATION AGENCY



YUDO SWASONO
HEAD
PLANNING AND DEVELOPMENT
BOARD
MINISTRY OF MANPOWER
(DEPNAKER)

In response to the request of the Government of the Republic of Indonesia, the Government of Japan dispatched the Preparatory Study Team (hereinafter referred to as "the Team") for the Study of Engineering Manpower Development Planning in the Republic of Indonesia (hereinafter referred to as "the Study"), from November 29 to December 7, 1993, to discuss the Scope of Work (hereinafter referred to as "S/W") for the Study.

The Team conducted field surveys in the country and had a series of discussions with the officials concerned of the National Development Planning Agency (hereinafter referred to as "BAPPENAS") and the Ministry of Manpower (hereinafter referred to as "DEPNAKER"). The list of attendants is attached as Annex I.

This document is to supplement S/W signed between BAPPENAS/DEPNAKER and the Team on December 7, 1993, summarizing the main results of the said discussions as follows.

1. CLAUSE VII OF S/W "UNDERTAKINGS OF THE GOVERNMENT OF THE REPUBLIC OF INDONESIA"

(1) Indonesian side indicated that clause VII of S/W shall be applied to the members of the Japanese study team "in accordance with relevant laws and regulations in force in the Republic of Indonesia."

The Team requested that the items under clause VII of S/W shall be guaranteed even when relevant laws and regulations are changed in future.

Indonesian side agreed to do so.

(2) The Team explained to the Indonesian side that the Japanese study team members will carry regular passports instead of official ones.

In this connection, both sides confirmed that all items under clause VII of S/W shall be applied to the members of the Japanese study team.

Also the Team requested the Indonesian side i.e. DEPNAKER to issue letters of invitation to the members of the Japanese study team to facilitate their obtainment of entry visas to the Republic of Indonesia. Indonesian side agreed to do so.

2. MAINTENANCE OF STUDY CONTENTS/RESULTS CONFIDENCE

Based on the BAPPENAS's request, both sides agreed that the contents and results of the Study shall not be made open to public during and after

the Study without a written approval from the Government of the Republic of Indonesia, and the period of confidence shall be determined at later date through discussion between the Indonesian and Japanese sides.

3. TECHNICAL TRANSFER TO INDONESIAN COUNTERPARTS

BAPPENAS stressed the importance of having active participation of Indonesian counterparts in the Study, through which their capability of conducting similar kind of study in future will be improved.

4. VEHICLES

Indonesian side expressed its difficulties in giving guarantee, at present moment, of providing vehicles to the Japanese study team, but expressed its intention to seek such possibility as much as possible.

5. OFFICE SPACE

Based on the Team's request, Indonesian side agreed to install an individual telephone line in the office space which is going to be provided by DEPNAKER.

THE LIST OF ATTENDANTSINDONESIAN SIDE

| | |
|----------------|--|
| A. A. Machrany | Bureau Head, Bureau of Manpower and Job Opportunity Development, BAPPENAS |
| Yudo Swasono | Head, Planning and Development Board, DEPNAKER |

JAPANESE SIDE

| | |
|------------------|--|
| Kasai Akira | Team Leader, JICA Preparatory Study Team |
| Koga Masato | Team Member, JICA Preparatory Study Team |
| Akizawa Hikari | Team Member, JICA Preparatory Study Team |
| Hanatani Atsushi | Team Member, JICA Preparatory Study Team |

OBSERVERS

| | |
|------------------|-----------------------|
| Kurakata Hiroshi | JICA Indonesia Office |
| Takata Hirohiko | JICA Indonesia Office |

4. 要請書 (T/R)



DJ4831-2

REPUBLIC OF INDONESIA
NATIONAL DEVELOPMENT PLANNING AGENCY
JAKARTA, INDONESIA

Attachement

LIST OF PROJECTS PROPOSAL
1991/92

Project Type General Grant Aisd

1. QTA-150 Analysis of the Market for Engineers,
Engineering Technologist and Technicians
in Indonesia

Project Type Development Study

1. QTA-158 Project for Upgrading of CEVEST

AD-US90.FW1/SK-X11

AN ANALYSIS OF THE MARKET FOR ENGINEERS AND ENGINEERING
TECHNOLOGISTS AND TECHNICIANS IN INDONESIA

DJ4837-3

The growth and quality of Indonesia's professional and technical manpower will be an extremely important factor for the effective implementation of medium and long-term economic development strategies. Engineering manpower comprises an important component of scientific professional and technical manpower in industrialized countries and countries undergoing strong economic development. In this regard it is important to have reliable estimates of the current stock of engineers and related occupations as well as projections of future supply and demand conditions by engineering specialization. This project would examine the domestic supply channels of engineering manpower in Indonesia as well as develop demand projections within an occupational requirements (model) framework. The current institutional framework in Indonesia and the experiences of other countries with respect to engineering manpower would be examined as well.

Demand Side
=====

The project would examine in detail present and future demand conditions for engineers and engineering technologists and

technicians by specialization: chemical, civil, electrical, industrial, mechanical, metallurgical, mining, petroleum, aeronautical, electronic, biotechnological and nuclear. In addition, for engineering technologists and technicians, an examination of architectural engineering, scientific, mathematical and drafting design principles and practices would be undertaken. <Both medium and long-term projections of the future requirements for engineering manpower by specialization > would be developed under alternative scenarios with respect to sectoral output and employment growth.

Initially, survey data from the 1980 Sensus Penduduk and the 1985 Supas would be examined. These are the only available major surveys which have occupational information. However, since the sample size is relatively small in the 1985 Supas and since there may be considerable sampling and response error in both surveys, a special survey of small, medium and large firms may be required to obtain a reliable and detailed profile of engineering manpower in Indonesia, which could serve as a basis for projecting the future demand and supply for engineering manpower. The project would also involve the design of an appropriate questionnaire and sample framework.

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定表付録 - 3: 410

Supply Side

<All existing sources of information on the supply of engineering manpower in Indonesia> would be thoroughly examined. <An assessment of the future supply of engineering manpower (both terms of quantity and quality) in relation to prospective demand conditions> is important for determining potential occupational imbalances. The project would examine the supply of engineering manpower by field of study from the university system including polytechnics. <A model for projecting the future supply of engineering manpower from higher educational institutions> would be developed. This combined with other sources of information, would provide the basis for projecting future supply conditions by engineering specialization.

In addition to the university systems, other supply channels for engineering manpower would be examined including off-shore supply, public and private non university institutes of technology and related institutions as well as vocational training.

Comparison With Other Countries
=====

The project would also examine the experiences of other countries, such as Japan, Korea and Taiwan, with respect to the

DJ4831-5

development of engineering manpower to promote economic development. This would provide valuable information for policy development in Indonesia.

Other Issues
=====

In addition to demand/supply conditions and inter-country comparison, other important issues to be dealt with include:

1. Consultations with private and public firms and associations and related institutions concerned with engineering manpower. This would be an important component of the project in terms of supplying valuable information on the nature of the labor market for engineering manpower in Indonesia.

input

2. Certification/standards for engineering manpower (concepts/definitions);

output ←

3. Technological change/high technology and its relationship to the development of engineering manpower.

input ←

4. Occupational mobility of engineering manpower.

DJ4831-6

5. Lower and higher vertical substitution of professional engineers and engineering technologists and technicians (for example, to what extent can technologists and technicians perform professional engineering functions in periods of tight labor markets).

DJ4831-7

1. PROJECT TITLE : AN ANALYSIS OF THE MARKET FOR ENGINEERS AND ENGINEERING TECHNOLOGISTS AND TECHNICIANS IN INDONESIA.

2. Location : JAKARTA

3. Executive Agency : National Development Planning Agency (BAPPENAS)

4. Objectives : *output* To develop strategic policies and plans for increasing the engineering manpower capability in Indonesia to meet economic development objectives for Repelita V and beyond.

- To enhance the skill levels of engineering manpower in Indonesia.
- To provide an ongoing capability to assess engineering manpower supply and demand conditions for educational planning purposes and for overall human resource policy development.
- To estimate present and future supply and demand condition for engineers and engineering technologists and technicians by specialization (chemical, civil, electrical, industrial, mechanical, metallurgical, mining, petroleum, aeronautical, electronic, nuclear biotechnological).

5. Project Description : - To estimate the current stock of engineering manpower in Indonesia by specialization.

- To develop a model to project the supply and demand of engineering manpower in Indonesia for the medium term (Repelita V) and long-run.

DJ4831-8

- To protect the medium and long-run supply and demand conditions for engineer and engineering technologists and technicians.
- To develop implement a survey of engineering manpower in small, medium and large enterprises.
- To examine existing supply sources of information on engineering manpower from universities and other channels.
- To examine the experiences of other countries such as Japan, Korea and Taiwan with respect to the development of engineering manpower.
- To consult with public institutions and private firms concerned with engineering manpower.
- To examine certification/ standards for engineers.
- To examine the market for engineers in the development of high technology.

6. Implementation Time : 2 (two) years.

7. Project Cost : Total cost \$ 535,000

Amount Proposed for Commitments : \$ 535,000

↓
~~1972-1976~~
 1972-1976?

DJ4831-9

DJ4831-10

9. Related to Technical Assistance : -

10. Stage of Project Preparation : -

DJ4831-11

BREAKDOWN OF PROJECT COSTS (US.Dollars)

1. Salaries and expenses (Approximate World Bank Billing Rates)

Experts : 24 man months = \$ 300,000

Local : 120 man months = \$ 150,000

2. Domestic and International

Travel = \$ 30,000

Administration :

Computer, Office Rental, Supplies,
Secretary / typist and other
administrative expenses = \$ 40,000

4. Survey of Engineering Manpower = \$ 15,000

TOTAL COST = \$ 535,000

5. 質問状回答

Study of Engineering Manpower Development Program in Indonesia

- QUESTIONNAIRE FOR THE PREPARATORY STUDY -

The study team would like to receive from the relevant authorities the data and information marked by an "X" on the attached sheets. Documents marked by an "X*" indicate documents which the study team would like to receive during its visit to Indonesia.

It would be most appreciated if you would contact additional authorities regarding documents that Bapennas is not familiar with.

Necessary Data and Information

| Description | Availability | | Title of Information |
|--|--------------|-----------------------|----------------------|
| | Yes/No | Place, Authority | |
| 1) National planning | | | |
| 1 Economic Development planning | | | |
| 1.1 General View and Macroeconomic Targets of REPELITA VI (including quantitative information, if possible) | X* YES | Bappenas | Repetitor <u>VI</u> |
| 1.2 General View and Macroeconomic Targets of the 25-years Long-Term Development Plan II (including quantitative information, if possible) | X* YES | Bappenas | Repetitor <u>V</u> |
| 2) Institution List (Name, Address) | X* | | |
| 1 National Enterprise List | X* YES | CBS | Statistics Industry |
| 2 Cooperative Association List | X* YES | KADIN | |
| 3 Labor Union List | X* | | |
| 4 Public Employment Agency List | X* | | |
| 5 Main Domestic Research Institutions for Labor Economics and Human Resource Development (Universities, National Research Institutions) List | X* YES | University | |
| 6 Foreign-affiliated Firms List | X* | | |
| 3) National System | | | |
| 1 Government Statistics List | X* | | |
| 2 Qualification Systems for Engineers, Engineering Technologists and Technicians | X* YES | Ministry of Education | |
| 3 National Qualification Examination for University Entrance | X* YES | Ministry of Education | |
| 4 Population Registered System | X* | | |
| 4) National Standards for Statistics | | | |
| 1 Industrial Classification of all Economic Activities | X* YES | CBS | |
| 2 Classification of Occupations | X* YES | CBS | ISCO |
| 5) Information for The Main Study Please see Attached Paper | X | | |

QUESTIONNAIRE

DEMAND SIDE:

1. Population Statistics:

- 1-1 Total population as classified by regions, sex and age, for each year from 1980 to 1992. 1980 * 1990
- 1-2 Labor force population engaged in economic and non-economic activities and classified by regions, sex and grouped age, for each year from 1980 to 1992. 1980 * 1990
- 1-3 Estimated total population in future as classified by regions, sex and age, for each year from 1993 to 2008.
Yes.

2. Industrial Statistics:

- 2-1 Production value, number of enterprises and number of employees as classified by industrial categories(1/), for each year from 1985 to 1992. ✓ CBS
- 2-2 Production value, number of enterprises and number of employees as classified by manufacturing sector categories(2/) and scales of enterprises, for each year from 1985 to 1992. CBS
- 2-3 Number of employees as classified by industrial categories(1/) and manufacturing sector categories(2/) as well as by sex and grouped age, for each year from 1985 to 1992. CBS
- 2-4 Educational background structure of employees classified by industrial categories(1/) and manufacturing sector categories(2/), for each year from 1985 to 1992. CBS
- 2-5 Number of engineers, engineering technologists and technicians as classified by industrial categories(1/) and manufacturing sector categories(2/), for each year from 1985 to 1992. NO

Note:

- 1/ Such as: Manufacturing, Mining/Petroleum, Construction, Electricity/Gas/Water supply, Transportation/ Telecommunication industries and Administration/Defense forces and others. ('Others' include: Agriculture/ Forestry/Fishery, Commerce, Financial business, Real estate and Services. 'Car mechanics' should be noticed within 'Services', in particular.)
- 2/ Such as: Food, Textile/Clothing, Wood products, Paper/Pulp, Chemical (chemical fertilizer, organic chemical, inorganic chemical, chemical fiber, oil and fat products/soaps, other

chemical), Rubber, Glass/Earthenware, Basic metal (iron and steel, nonferrous metal), Metal products/Machinery (farm machine, industrial/heavy machine, electric/electronic machine/appliance), Transport equipment (shipbuilding, Automobile, car parts, Steam train and Aircraft) and others.

SUPPLY SIDE:

1. School Education System

1-1 Chart of school education system (for national, public and private school education, from primary school to college/university level, and including ordinary and vocational education). *Ministry of Education & Culture → (MDEC)*

(Items below shall be revised according to the actual situation of Indonesia's school education system.)

1-2 School education statistics:

- 1) Number of schools (for primary, junior high and senior high schools, vocational schools, colleges and universities), for each year from 1985 to 1992. *MDEC*
- 2) Number of entrants and graduates at primary, junior high and senior high schools, vocational schools, colleges and universities, for each year from 1985 to 1992. *MDEC*

1-3 Primary school statistics:

- 1) Number of primary schools by region, for each year from 1985 to 1992.
- 2) Number of entrants and graduates at primary schools as classified by regions and sex, for each year from 1985 to 1992. *MDEC*

1-4 Junior high school statistics:

- 1) Number of junior high schools by region, for each year from 1985 to 1992. *MDEC*
- 2) Number of entrants and graduates at junior high schools as classified by regions and sex, for each year from 1985 to 1992. *MDEC*
- 3) Number of entrants and graduates at junior high schools as classified into the ordinary course and the vocational course, for each year from 1985 to 1992. *MDEC*

1-5 Senior high school statistics:

- 1) Number of senior high schools by region, for each year from 1985 to 1992. MOEC
- 2) Number of entrants and graduates at senior high schools as classified into the ordinary course and the vocational course, for each year from 1985 to 1992. MOEC
- 3) Number of entrants and graduates for vocational course as classified by vocational fields(3/), for each year from 1985 to 1992. MOEC
- 4) Number of entrants and graduates for industrial course as classified by industrial specializations(4/), for each year from 1985 to 1992. MOEC

1-6 Vocational school statistics:

- 1) Number of vocational schools as classified by regions and vocational fields(3/), for each year from 1985 to 1992. Ministry of Manpower
- 2) Number of entrants and graduates for industrial field as classified by industrial specializations(4/), for each year from 1985 to 1992. Ministry of Manpower

1-7 College statistics: NO !

- 1) Number of colleges as classified by regions, for each year from 1985 to 1992.
- 2) Number of entrants and graduates at colleges as classified into technical/engineering and other disciplines, for each year from 1985 to 1992. =
- 3) Number of entrants and graduates for technical/engineering as classified by technical/engineering fields(5/), for each year from 1985 to 1992.

1-8 University statistics:

- 1) Number of universities (including technological and other specialized universities) and their entrants and graduates, for each year from 1985 to 1992. MOEC
- 2) Number of entrants and graduates for engineering science, for each year from 1985 to 1992. MOEC
- 3) Number of entrants and graduates for engineering science as classified by engineering fields(5/), for each year from 1985 to 1992. MOEC
- 4) Number of entrants into postgraduate courses as classified by science fields, for each year from 1985 to 1992. MOEC

Note:

- 3/ Such as: Agriculture, Industry, Commerce, Teacher training, etc.
- 4/ Such as: Civil engineering/Building, Metallurgy/Mechanical, Electrical/Electronic, Chemical, Shipbuilding, Information, etc.
- 5/ Such as: Chemical, Mining, Civil, Petroleum, Electrical, Aeronautical, Industrial, Electronic, Mechanical, Biotechnological, Metallurgical, Nuclear, Others.

2. Work Training System

No

- 2-1 Chart of work training system (for national, public and private systems).
- 2-2 Work training statistics:
 - 1) Number of work training facilities as classified by regions, training methods and training fields.
 - 2) Number of people (per year) who complete training courses, for each year from 1985 to 1992.
 - 3) Number of people (per year) who complete industrial training courses as classified by job categories (6/), for each year from 1985 to 1992.

Note:

- 6/ Such as: Metal processing/Welding, Assembling and repair of machine/equipment, Assembling and repair of electrical equipment/appliances, Making clothes/textile goods, Making wooden furniture/fittings, Carpentry, Printing/Bookbinding, Painting, Drawing pictures/signboards, Architecture drafting, Construction skill for wood/brick buildings, Measuring, Civil engineering work/Paving work, Plastering, Plumbing, Tiling, Brick laying, Electrical wiring (strong current), Operation of construction machinery, Operation of cranes/winding machines, Car mechanic, Information processing, Managing card punches, Operation of computers, etc.

3. Job Training System Within Enterprise

No

- 1) Number of enterprises operating the job training system within the company.
- 2) Technical/skill categories for which employees are trained in the job training system.

- 3) Number of employees (per year) who complete the training course as classified by technical/skill categories, for each year from 1990 to 1992.
- 2) How the job training system within the company is placed in the Work Training System of the country.

LIST OF ENTERPRISES FOR ENTERPRISE SURVEY: NO

Outline of enterprise survey:

- Number of enterprises surveyed: 10,000.
- Industrial categories:
Manufacturing*, Mining/ Petroleum, Construction, Electricity/
Gas/ Water supply, Transportation/ Telecommunication,
Administration/ Defense forces, and others (Agriculture/
Forestry/ Fishery, Commerce, Financial business, Real estate,
and Services**).
- *Manufacturing is based on the middle level group of the
standard classification of industry.
- **'Car mechanic' in particular is picked up from 'Services'.
- Scale of enterprise:
Enterprises of a scale of not less than 20 employees are the
main targets, while enterprises having 5 to 20 employees are
also picked up according to their industrial category.

6. 収集資料リスト

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