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**Ex-post Evaluation Report**

**on**

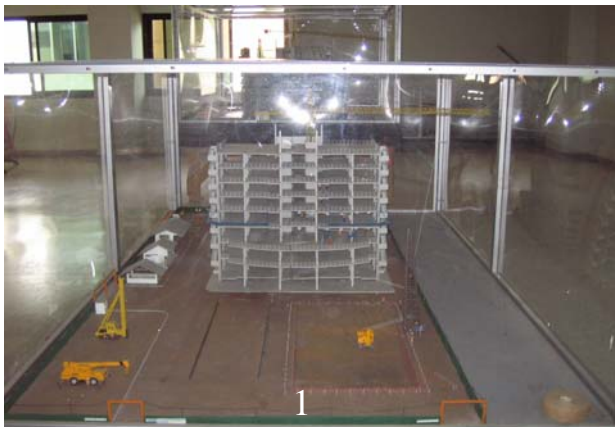
**The Project on the Strengthening of  
the National Institute  
For the Improvement of Working  
Conditions and Environment**

**February 2006**

**Japan International Cooperation Agency  
Thailand Office**

**Kaihatsu Management Consulting (Thailand) Ltd.**

<b>TIO</b>
<b>JR</b>
<b>06-001</b>



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- 1 Model of Construction Safety for training activity
- 2 Samples of poster – stands for Safety Week Exhibition
- 3 Projector kept in Safety Library
- 4 Daily information service at Safety Library
- 5 Posters and tools for exhibitions are kept in Safety Library.
- 6 Small meeting room at NICE
- 7 Senior Manager of SH Inspectors are being trained at NICE





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- 8, 9 Provided equipments at Chemical Laboratory
- 10 Manuals for distribution
- 11,12 Equipments & Tools for Occupational Safety at the Workshop
- 13 Nakhon Chai Tour Company Ltd. supervised by senior manager attended SH inspector training in 2001
- 14,15 Presentation of the Ex-post Study preliminary findings to the stakeholders meeting at NICE ; Nov. 25, 2002

## 事後評価調査結果要約表

評価実施部署： タイ事務所

<b>1. 案件の概要</b>	
<b>国名：</b> タイ王国	<b>案件名：</b> タイ労働安全衛生センター拡充計画
<b>分野：</b> 社会保障・労働・雇用関係	<b>協力形態：</b> プロジェクト方式技術協力
<b>所轄部署：</b> 労働省 労働者保護福祉局 (協力当時：労働社会福祉省 労働者保護福祉局) タイ労働安全衛生センター	<b>協力金額：</b> 6億 6,800万円
<b>協力期間</b>	1997年7月1日～ 2002年5月31日
<b>先方関係機関：</b> 労働省 労働者保護福祉局 (協力当時：労働社会福祉省 労働者保護福祉局)	
<b>他の関連協力：</b> N/A	
<b>1-1 協力の背景と概要</b>	
<p>急速な工業化に伴い、タイでは労働災害や職業性疾病の発生が増加している。そのため、第7次国家経済社会開発5カ年計画(1992～1996年)では、重点目標の一つとして、労働者の労働災害や職業性疾病からの保護が掲げられた。かかる状況に鑑み、労働安全衛生基準の策定と普及のための指導、調査研究、研修などを行っている同国の労働安全衛生センター(National Institute for the Improvement of Working Conditions and Environment, NICE)の充実が急務となり、タイ政府は1994年に日本政府に対して技術協力を要請した。</p> <p>協力の要請を受けて、日本政府は実施機関である国際協力機構を通じ、1996年に事前調査と短期調査、1997年には実施協議を行い、1997年6月にプロジェクトが開始された。プロジェクトが終了して3年が経過したことから、フォローアップのために本事後評価調査が実施された。</p>	
<b>1-2 協力の内容</b>	
<p>日本側は長期専門家、短期専門家を派遣して技術移転を実施したほか、機材・機器の供与とカウンターパートの本邦研修を行った。タイ側は、建物の建設のほかカウンターパートを本プロジェクトに配置した。プロジェクトの受益者がタイの労働者であったことから、プロジェクト活動は、労働者の安全確保のために必要な基準やマニュアルの策定、研修カリキュラムやテキストの作成、NICEが担当する安全衛生活動に関する広報活動の改善に主眼が置かれた。</p>	
<b>(1) 上位目標</b>	
労働者が労働災害や職業性疾病から保護される。(客観的評価指標は、「労働災害や職業性疾病の数が2002年までに労働者1,000人あたり26人以内まで減少する」)	
<b>(2) プロジェクト目標</b>	
NICEの機能が強化される。	
<b>(3) 成果</b>	
<ol style="list-style-type: none"> <li>1) NICEの技術的能力が向上する。</li> <li>2) 安全衛生監督官を対象とした研修コースが改善される。</li> <li>3) 企業の安全衛生担当者を対象とした研修コースが改善される。</li> <li>4) 安全衛生に関するNICEの広報活動の質が向上する。</li> </ol>	
<b>(4) 投入(プロジェクト終了時)</b>	
日本側：	
長期専門家	8名
短期専門家	25名
研修員受け入れ	20名
機材供与	2億 2,546万円
ローカルコスト負担	7,562万バーツ

タイ側： カウンターパート	NICE40名、労働者保護福祉局労働安全・健康監理部 (Occupational Safety and Health Inspection Division, OSHID) 11名	
土地・施設提供 ローカルコスト	日本人専門家のための事務所提供 1億4,843万バーツ (4億4,255万円) (プロジェクト運営費, ワークショップ実施経費、建物の建設費)	
<b>2. 評価調査団概要</b>		
調査者	(担当分野：氏名、所属先、職位) Mrs. Sinee Chuangcham Kaihatsu Management Consulting (Thailand) Ltd.	
調査期間	2005年10月3日～2006年1月30日	評価種類：事後評価
<b>3. 評価結果の概要</b>		
<b>3-1. 評価結果の要約</b>		
<b>(1) インパクト</b>		
<p>現時点において、上位目標（労働災害や職業性疾病の数が2002年までに労働者1,000人あたり26人以内まで減少する）は達成されていない。しかしプロジェクト終了後、労働災害と職業性疾病の発生は大幅に低下し、1998年の労働者1,000人中36.24人から2002年には29.20人、2004年には29.18人となっている。目標には届いていないものの、発生率は毎年確実に低下している。</p> <p>発生率が低下した要因の一つとしてNICE機能が強化されたことがあげられる。具体的には、(i) プロジェクト開始から2005年10月までに合計28万3,039人の安全衛生監督官が訓練を受け、NICE機能の強化につながったこと、(ii) NICEの研究成果が広く普及されたこと、(iii) NICEによって様々な形の広報活動が行われたこと、があげられる。</p> <p>(i) プロジェクト期間中に基準・マニュアル策定を通じて得られた知識や経験を活用して、プロジェクト終了後も、さらに21の基準・マニュアルと6つの研究レポートが作成された（定期発行されたSafety Newsletterは除く）。こうした成果物は、安全衛生監督官研修のようなさまざまな機会を利用して、プロジェクト対象者や関係者、地方労働安全衛生センター（Regional Centers for Improvement of Working Conditions and Environment, RICE）に配布された。(ii) 安全衛生監督官研修を受けたいという外部からの要請が多くなったため、NICEは研修の実施を外部機関に委託した。(iii) 研修機関として数多くの民間企業が設立され、認可された。(iv) 数年後、いくつかの研修機関では、指導官の実務経験不足から研修の質が低下するという問題が発生していた。そのため、NICEは安全衛生監督官を有する企業も研修機関として考慮することとした。さらには、品質保証と認可更新にかかるシステムを改善した。</p> <p>こうした一連の活動は、労働現場における安全のあり方について労働者や企業の意識を高めることにつながったと考えられる。こうしたことを踏まえれば、プロジェクト終了後に、労働災害の発生率が低下したことと、NICEによって労働安全衛生（Occupational Safety and Health, OSH）促進に関わる活動が進められたことに対して、プロジェクトは正のインパクトを与えたと評価される。</p>		
<b>(2) 自立発展性</b>		
技術面からの自立発展性は次の理由から高いと評価される。		
1) 人的資源：(i) NICE本部の現職員の約71%は、プロジェクト開始以前から現在に至るまでNICEに勤務している。(ii) カウンターパートの内、労働省の他の部署に移動した者も職場の安全衛生と労働者保護に係わる職務を継続している。(iii) NICE職員は総数72人であり、プロジェクト期間中と変わりはない。(iv) 「労働者復興基金」から追加予算が配分され、民間人やパートタイマーを契約雇用し、NICE本部やRICEで勤務させている。		

- 2) NICEの「組織成果指標」(Key Performance Indicator, KPI)によれば、全職員が少なくとも年1回、自己啓発活動に参加すべきとされている。そのためNICEは、職員が当該活動に参加するための登録料、交通費、日当などの経費を補助している。また、職員の能力開発のために、NICEは政府以外の機関からも財政支援を受けている。カウンターパート調査の結果によれば、回答者(17人)の89%は、プロジェクト終了後、年1回以上自己啓発のための活動をしている。

#### 組織面:

- 1) 新たに建設されたビルとワークショップは十分に活用されている。2003年10月29日に新ビルが正式にオープンし、それ以来NICEとOSHIDの事務所として利用されている。建物には、研修用の設備、実験室、図書館、展示場がある。JICAから供与された実験用機材は、計画通り新しい実験室に移転、据付けられている。現在、シニア安全衛生監督官養成のための研修コースの最後の2日間と、労働省職員に対するOSH研修・ワークショップが、NICE建物内で定期的に行われている。
- 2) 供与された機器や機材の利用状況について調査した結果、これら諸機材の内79%のみが良好な状態にあり、研修や職場環境のアセスメントなどに活用されている。しかし日本で調達された機材の一部は、タイでのスペアパーツ入手が困難であることや修理費が高すぎるという問題を抱えている。そのためNICEでは、ごく一部の必要部品のみ国内で調達・交換したに過ぎない。また、監督官訓練コースの多くは民間企業によって地方で行われているため、供与された機材は以前ほど活用されてはいない。
- 3) プロジェクト終了後、NICEのアドバイスが欲しいという要望が特に中小企業から増大していることから、それに適切に応えるため、NICE職員によって何度かNICEの組織再編が行われた。最近の組織再編により、研修の外部委託によってNICEの役割を縮小し、NICE本部は普及、開発、認可業務を強化できるようになると考えられる。一方でRICEは中小企業に対する指導業務や、安全衛生監督官とのネットワーク強化により力を注ぐことになる。

結論として、NICEは、増大する要望に応えるために組織の再編成や利用可能な資産の管理を継続して行っているといえ、組織面からの自立発展性は高いと評価される。

財政面での評価は高い。プロジェクト終了後、NICEは組織運営のために十分な予算を労働省より毎年受けている。2003年度は2,070万バーツ、2004年度は2,400万バーツであった。また2005年度は、3,154万バーツの予算を受けとったが、それにはRICEが使用する車両の購入、新ビルの保守、JICAから供与された移動研修用車両の保守などのための費用が含まれている。年間予算とは別に、マニュアルや報告書などの出版や、安全衛生の普及にかかわるワークショップ開催のための費用補助を関係機関から受けている。

#### プロジェクト効果

(1) 安全衛生監督官に対する研修について、プロジェクト終了後に研修を受講した監督官は年間平均2万9,645人であり、プロジェクト期間中の1万9,616人と比べて多くなっている。プロジェクト終了後に受講者数が増加した点は高く評価される。(2) 研修カリキュラムの妥当性は中程度である。その理由は、研修ではOSHについて必要な知識を得ることはできても、安全衛生システムの導入に必要な費用について情報が十分ではなく、また企業にとっても導入によって得られる便益について明確にされていないことである。その結果、調査対象者の65%が研修カリキュラムの関連性は「中程度」と答えている。(3) 研究活動、マニュアルやガイドラインの作成が継続して行われており、その点からの評価は高い。研究テーマの設定、研究活動の実施、経済的支援などにおいて民間企業と密接に連携し、プロジェクト実施後もさらに多くの研究活動が行われている。

このように、さまざまな成果があったことを踏まえれば、総合的にプロジェクトの自立発展性は高いと評価される。

### 3-2 プロジェクトの促進要因

#### (1) インパクト発現を促進した要因

法令、規制：

職業安全に関する 9 つの省令が制定され、4 つは 2004 年、5 つは 2005 年に公布された。このほか、職業安全、衛生、職場環境に関する法令が 2005 年に公布された。こうした法令を遵守するため、企業は安全衛生管理をより徹底しなければならないことになっている。その結果、より多くの労働者や労働タイプ、特に危険度の高い業務に従事する労働者の保護につながっている。

政策的要因：

安全な食料生産を促進する「世界の台所」政策と、OTOP (One Tambon One Product、一タンボン一品) 振興プログラム(タンボン=郡)の施行によって、企業の生産活動における品質と安全の確保がより強化されるようになった。

#### (2) 自立発展性強化を促進した要因

組織要因：

NICE における技術能力の高い人材と豊富な予算配分が、安全衛生カリキュラムの開発や、NGO・コンサルタント企業・大学など戦略的パートナーとのネットワーク拡大といった面に大きく貢献し、プロジェクト活動の継続につながった。

国際機関との連携：

ILO/JAPAN による多国間・二国間プログラム、世界銀行、アセアン諸国の OSHNET(職業安全衛生ネットワーク)などからの技術的および財政的支援が、NICE の人的開発や重要政策の施行に貢献した。

### 3-3 プロジェクトの阻害要因

#### (1) インパクト発現を阻害した要因

組織要因：

公務員の定員増を凍結するとした政策は、労働安全衛生に係るアドバイスサービスの需要が多くなっているにもかかわらず、NICE 職員の増員を不可能なものとしている。そのため、近年、NICE は業務の実施体制をより柔軟にしつつあり、危険度の高い産業や中小企業に対応するためにパートナー機関からの協力を得られやすくしている。

社会文化的要因：

労働安全衛生についてさまざまな形で NICE が広報しているにもかかわらず、タイ人の多くにはあまり認識されていない。そのため、安全管理の実施にはあまり関心が向けられていない。労働災害の報告書によれば、災害や事故の最も大きな原因の一つは当事者の注意不足である。シニア安全衛生監督官へのインタビューによれば、特に中小規模の企業の中には、費用面の懸念から安全確保に必要な措置を何もしていない経営者がいる。

#### (2) その他

タイ政府は、NICE の労働安全衛生を担当する独立行政法人 (Autonomous Public Organization, APO) への移行を決定した。他国の APO について調査した結果からも、APO の設立が必要と結論付けられている。こうしたことにも関わらず、いまだ APO 設立について政府の最終決定がなされていない。

### 3-4. 結論

2002 年のプロジェクト終了後、プロジェクトの上位目標とプロジェクト目標の達成度という観点からインパクトは大きいと評価された。その理由として、次の 3 点があげられる。第一に、上位目標には到達していないものの、NICE の機能強化が貢献し、労働者 1,000 人あたりの労働災害発生率が毎年減少傾向にあること。第二に、プロジェクト開始から 2005 年 10 月までに既に合計 28 万 3,039 人の安全衛生監督官が訓練を受けたこと。最後に、研究成果が広く普及され、広報は色々な面で改善されたこと。こうした一連の活動によって、労働者および企業の労働安全性に対する意識が高まったといえる。



人的資源の面からの NICE の自立発展性は高いと評価された。その理由は、(i) NICE 本部に勤務する現職員の約 71%はプロジェクト実施時のカウンターパートである。カウンターパートの内、労働省の他の部署に移動した者も職場の安全衛生、労働者保護に係わる職務を継続している。(ii) 労働者復興基金からの追加予算により、民間人、パートタイマーを契約雇用している。(iii) インタビューしたカウンターパートの 89%は、年 1 回以上、自己啓発のための活動をしている。

こうしたことによって NICE 職員の能力は継続的に向上し、プロジェクトで技術移転された内容はシニアから若い職員に引き継がれている。

新たに建設されたビルとワークショップの利用状況により、組織面での自立発展性は高いと評価される。その理由は、(i) 新ビルの建設が完了し、JICA から供与された機器や機材は予定通り新ビルに設置されている。(ii) 新ビルは NICE と OSHID の事務所として利用されている。建物には、研修用の設備、実験室、図書館、展示場があり活用されている。

供与された機器や機材の利用状況の面からの評価は低い。その理由は、機材の 79%のみが良好な状態にあり、NICE や RICE において研修や職場環境のアセスメントなどに活用されているが、残りの機材は故障しているか状態が悪くなっていることによる。これらの機材は日本で調達されたため、タイでの部品入手が困難であることや修理費が高すぎるという問題がある。さらに、バイオ実験室は責任者が退職したことにより稼動していない。

最近、組織の役割が見直され、NICE 本部は労働安全衛生の普及、開発、認可業務を強化できるようにになると考えられる。一方で RICE は中小企業に対する指導業務や、安全衛生監督官とのネットワーク強化により力を注ぐことになろう。NICE の役割が見直されたことから、組織面からの自立発展性は高いと評価された。

プロジェクト効果の自立発展性に関しては、高いと評価された。その理由は、(i) 安全衛生監督官の年間研修受講実績が、プロジェクト期間中に比べて増加したこと。これは、研修実施に外部委託制度が導入されたことによる。(ii) 研修コースの質を維持するため、NICE が安全衛生監督官を有する企業も研修機関として考慮したこと。さらには、品質保証と認可更新にかかるモニタリング・評価システムも改善されたこと。(iii) 安全衛生監督官への研修カリキュラムは、一般的に民間企業のニーズに即したものであることが明らかになったこと。(iv) プロジェクト期間中に習得された知識や実務経験に基づき、数多くの研究プロジェクトが継続的に実施されたほか、マニュアルやガイドラインも多く出版されたこと。より多くの研究が企業と共同で行われ、報告書やマニュアルの出版には企業などからの財政支援がなされた。

語学上の理由から一部の日本人専門家との間で意思疎通が難しかったという問題があったが、プロジェクトは NICE 本部の機能を強化し、より効率的な労働安全衛生サービスの提供や、必要なマニュアルを開発する仕組みづくりに貢献したといえる。本評価調査の結果から、プロジェクト終了後も、NICE はプロジェクト活動の継続や供与機材の維持だけでなく、活動自体を拡大していることが明らかになった。また組織も再編され、NICE として果たすべき役割が強化されている点にも注目すべきである。

以上の結果に基づき、提言および教訓を以下に示す。

### 3-5. 提言(当該プロジェクトに関する具体的な措置、提案、助言)

危険度の高い機械の認可に係る能力向上：NICE の労働安全衛生認可部門では、認可機能を効率化させるため、危険度の高い機械の取扱管理者への免許発行や、免許更新時の審査及びその後のモニタリングに関する分野の能力向上を必要としている。タイにおける労働安全衛生をさらに促進させるために、ドナーによる支援の可能性も含め、当該分野の強化策の検討が望まれる。



**RICE の機能強化**：RICE はタイ全国各地に建設されていることから、現場において企業と緊密に連携する上で NICE よりも適している。こうした連携をさらに強化するために、RICE は相応しい技術的知識や機材、効率的なモニタリングシステム、支援体制を NICE に求めている。こうした支援が適切になされれば、NICE が安全促進の役割を果たす上で RICE は積極的な貢献ができると考えられる。

**より積極的な広報活動**：様々な業種や規模の企業が実施している労働安全衛生に関して、良い事例については、出版物、メディア、研修などを通じて普及に努めるべきである。

**NICE の職員数が限られていることから**、研修を受けた安全衛生監督官が NICE の戦略パートナーとして、研修業務の講師や、労働安全衛生情報および成功事例の普及を担うことを期待する。監督官同士の既存ネットワークの強化と、新たなネットワークの構築を検討すべきである。

**学会・教育界との連携の維持と強化**：学会・教育界との協力関係をより強化する必要がある。例えば、労働安全カリキュラムの開発、学校での教育、優先度の高い分野における実践的研究活動などの面における連携強化が望まれる。

**労働安全衛生管理体制の構築に向けた積極的な対策**：企業による安全管理体制の構築に向けた動機付けや支援が望まれる。例として、中小企業への低利もしくは無利子の金融支援や、安全衛生管理を適切に実施している企業に対しては労働者復興基金からの借入金返済に際しての優遇措置などが考えられる。

### **3-6. 教訓(当該プロジェクトから導き出された他の類似プロジェクトの発掘・形成、実施、運営管理に参考となる事柄)**

本プロジェクトの真の成功は、労働者が労働災害や職業性疾病から保護されることにある。この点において、地方に展開している RICE の役割が特に重要であると考えられるが、残念ながらプロジェクトには直接関わっていない。したがって、NICE のような組織への技術支援を行う際は、本部のみではなく、一部の地方もパイロット地区として含めるべきである。

**技術移転**：派遣された JICA 専門家のほとんどは労働安全衛生の分野における知識や経験の面においてタイ側から高く評価されている。しかし、何名かの専門家は英語での意思疎通が困難であった。そのため、技術移転が効率的になされなかったケースもあった。専門家の選定においては英語能力も考慮すべきである。

**国外研修**：集中的に実践技術を学ぶためには、長・短期専門家による技術移転に加え国外研修も効果的な手法である。プロジェクトに含まれるカウンターパートの能力開発に関して両国で合意した事項については、プロジェクトの実施前に、国外研修も含めてその方法を両方で再度協議し必要に応じて修正することが望まれる。また、研修資料は全て英訳すべきである。

NICE のように研究開発、研修、認可などを担う機関に対して、カウンターパートの能力開発に主眼を置いた本プロジェクトのような技術支援は、組織の機能強化という観点から非常に有益である。今日、生産技術の変化が早いことから、訓練や労働環境の検査に使用される資機材の支援も合わせて検討されるべきである。あるいは、NICE のように一部の機能を外部委託することで、関連する資機材を保有する必要性が低くなり、より効率的な運営が可能となる。

<b>1. Outline of the project</b>		
<b>Country :</b> Kingdom of Thailand		<b>Project title:</b> The Project on Strengthening of the National Institute for the Improvement of Working Conditions and Environment (NICE)
<b>Issue/Sector :</b> Welfare/Health		<b>Cooperation scheme:</b> Project-type Technical Cooperation
<b>Division in charge :</b> National Institute for Improvement of Working Conditions and Environment, Department of Labour Protection and Welfare, Ministry of Labour (Former Ministry of Labour and Social Welfare)		<b>Total cost:</b> 668.008 million Yen
<b>Period of Cooperation:</b>	1 June, 1997 – 31 May, 2002 (5 years)	<b>Partner Country's Implementing Organization:</b> Department of Labour Protection and Welfare, Ministry of Labour (Former Ministry of Labour and Social Welfare)
<b>Related Cooperation:</b>	Project-type Technical Cooperation; "The Project on Strengthening of NICE"	
<p><b>1-1 Background of the Project</b></p> <p>Industrial accidents and occupational diseases in Thailand had been increased due to a rapid development of industrialization. One of the objectives in the 7<sup>th</sup> National Economic and Social Development Plan of Thailand (1992-1996) was to protect workers from industrial accidents and occupational diseases. Therefore, in 1994 the Thai government requested the Japanese government to extend a technical cooperation to strengthen the functions of NICE, which is in charge of giving guidance, conducting researches and studies, providing training, etc. in order to establish and promote occupational safety and health standards. In response to the request the Japanese government, through the Japan International Cooperation Agency (JICA) as an implementing agency, conducted the Preliminary Study and long-term Study in 1996 and Implementation Study in 1997. The Project was then commenced in June 1997. This ex-post study is conducted for the follow up after the project has terminated 3 years ago.</p> <p><b>1-2 Project Overview</b></p> <p>Japanese side has provided technical transfer by dispatching short and long term Experts, provision of equipment and machinery, and counterparts training in Japan. The Thai side has constructed the new building and provided C/Ps to work with the Project. Having workers in Thailand as Project's target group, main project activities include the preparation of guidelines and manuals for safety measures, the development of training curriculums on OSH and textbooks, and the improvement of public relations with regard to safety and health to be produced by NICE.</p> <p><b>(1) Overall Goal</b></p> <p>"Workers are protected from industrial accidents and occupational diseases." (Its objectively verifiable indicator is that the number of occupational accidents and diseases should be decreased to the level of less than 26 per 1,000 workers by 2002)</p> <p><b>(2) Project Purpose</b></p> <p>Functions of NICE are strengthened.</p> <p><b>(3) Outputs</b></p> <ol style="list-style-type: none"> <li>(1) Technical capability of NICE is improved.</li> <li>(2) Training courses for safety and health inspectors are improved.</li> <li>(3) Training courses for persons in charge of safety and health management in enterprises are improved.</li> <li>(4) Public relations by NICE with regard to safety and health are improved.</li> </ol> <p><b>(4) Inputs</b></p>		
<b>Japanese side:</b>		
<b>Long-term Experts</b>	8 persons	
<b>Short-term Experts</b>	25 persons	
<b>Trainees received</b>	20 persons	
<b>Equipment</b>	225.456 million Yen	
<b>Local Cost</b>	75.619 million Baht	

<b>Thai Side:</b>	
<b>Counterparts</b>	40 C/Ps from NICE and 11 C/Ps from OSHID
<b>Land and Facilities</b>	Office space for Japanese experts
<b>Local Cost</b>	148.434 million Baht (442.552 million Yen) (Budget for project operation and budget for construction of workshop and new building)
<b>2. Evaluation Team</b>	
<b>Members of Evaluation Team</b>	1) Mrs.Sinee Chuangcham Kaihatsu Management Consulting (Thailand) Ltd.
<b>Period of Evaluation</b>	3 October 2005 – 30 January 2006 <b>Type of Evaluation:</b> Ex-Post Evaluation
<b>3. Results of Ex-Post Evaluation</b>	
<b>3-1 Summary of Ex-Post Evaluation Results</b>	
<b>(1) Impact</b>	
<p><u>Overall Goal:</u> At Project completion the overall goal has not yet been achieved but the number of injuries and diseases declined significantly from 36.24 per 1,000 workers in 1998 to 29.20 in 2002. Even until 2004 the total number of injuries, 29,18 per 1,000 workers, has not reached the set target. However, the rates of injuries occurrence indicate a trend of constant decrease every year.</p> <p><u>Project Purpose:</u> The progress is derived from (i) the strengthened functions of NICE, by which 283,039 SH Inspectors have been trained since the Project began until October 2005, (ii) the disseminated research results and (iii) public relations in various forms.</p> <p><u>Project Outputs:</u> (i) Ideas and practical experiences in preparation of manuals/guidelines derived from the Project enabled NICE to continuously develop another 21 guidelines/manuals and 6 research reports (excluded Safety Newsletter which was regularly published). New publications and the ones produced during the Project were distributed to target groups and stakeholders in various occasions such as SH Inspectors training. Many copies have also been sent to RICEs for further distribution.</p> <p>(ii) In order to cope with an increased demand for the SH Inspectors training courses, NICE has transferred the responsibility for the organization of the training to the out sourcing system. (iii) Many private firms have been established and received the license for the organization of the training courses. (iv) After several years some firms have problems with the declining quality, i.e. some of the trainers did not have practical experience. NICE has recommended those firms that experienced SH Inspectors should be involved as trainers. Moreover, the system for the quality assurance and the renewal process of the license is also being improved.</p> <p>These activities have raised the awareness of the workers and the entrepreneurs about safety system at work sites. Therefore, it is evaluated that the Project has a positive impact on the achievement of the declining rate of injuries occurrence and on the expansion of NICE activities in the promotion of OSH.</p>	
<b>(2) Sustainability</b>	
<p><u>Technical aspect is evaluated as high.</u> (1)Human resources: About 71% of the current officials at NICE headquarters are the counterparts who have been working at NICE before the Project until present. The C/Ps who have been promoted to other Divisions in DLPW continued to work in relation to occupational safety and labour protection. The total number of government officials of NICE was maintained at 72 the same as the Project period. With the additional budget allocation from the Workmen's Compensation Fund (Office of the Workmen's Compensation Fund, Social Security Office, DLPW), civil employee and temporary employees were hired on contractual basis to work at the headquarters and at RICEs. (2) According to recent organization's Key Performance Indicator (KPI), each staff should attend staff development activity at least once a year. To encourage the achievement of KPI, NICE has provided support for the necessary expenses such as registration fee, transportation and per-diem. Beside government budget NICE also received assistance for staff development from related agencies. According to the C/Ps survey result, 89% of the respondents (Total respondents =17 persons) have gone through staff development activity not less than once a year after Project completion.</p> <p><u>Organizational aspect</u> (1) Utilization of the new building and workshop is evaluated as high: On October 29, 2003 the new building was officially opened. The new building is being used as offices of NICE and OSHID. It has facilities for training, laboratories, safety library, and exhibition hall. The equipment provided by JICA for laboratory has been moved to install in the new lab as planned. At present the last two days of the training courses of senior SH Inspectors as well as trainings and workshops on OSH for</p>	

DLPW staffs are regularly being held at the NICE building.

(2) Utilization of supplied machine and equipment. According to the survey result, 79% of the provided machinery and equipment are in good condition and being used in training activities and the assessment of working environment etc. Some equipment procured from Japan, had a problem with availability of the spare parts in Thailand or too expensive to repair. NICE has purchased only some necessary items locally for the replacements. As most of the inspector training courses are being held in the regions by the private firms, the provided machines and equipments are not as effectively used as before.

(3) Adjustment of organizational structure is evaluated as high: After the Project completion several adjustment have been initiated by NICE personnel themselves in an attempt to be more focused and to better response to a greater demand of advisory services esp. from small and medium enterprises (SMEs). According to the most recent structure, NICE will decrease some roles which can be more effectively managed by outsourcing system. Thus, NICE headquarters will emphasize on promotion, development, and service certification. While RICEs will provide guidance services and strengthen the SH inspector's network.

Conclusively, as NICE has shown a continuous attempt in the adjustment of the organizational structure and the management of the available resources in response to the increasing demands, the sustainability of the organizational aspects of NICE is evaluated as high.

Financial aspect is evaluated as high After the Project, NICE received adequate budget for organizational operation from DLPW Annual Budget Allocation (in 2003=20.70 mill. Bht., 2004=24.00 mill. Bht.). In 2005 NICE received 31.54 mill. Bht., which included budget for buying cars for RICEs, for the maintenance of the new building and for the repair and maintenance of the mobile training car which was provided by JICA. In addition to annual budget allocation NICE also received financial supports from related parties for publication of some manuals/reports and for organization of some workshops on OSH.

Sustainability of the Project effects (1) Safety and Health Inspectors training; evaluated as high: The average number of SH Inspectors trained per year after the Project (29,645 persons/year) is higher than during the Project (19,616 persons/year). (2) The relevance of the training curriculums evaluated as maintained: 65% of the survey respondents on relevance of the training curriculum is moderate. The senior manager reflected that the training course could provide the trainee with necessary knowledge on OSH but not enough information about the cost for the establishment of SH system and no clear evidence of the benefits that the enterprise will get from the implementation. (3) Research activity and production of manuals/ guidelines; high: As more action research/research at work site in close cooperation with private enterprises was done (in identifying research topic, conducting research and financial contribution).

Based on the higher and wider achievements mentioned above the overall sustainability of the Project effects is evaluated as high.

### **3-2 Factors that have promoted project**

#### **(1) Impact**

Law and regulations: Enactment of 9 Ministerial Regulations on occupational safety (4 regulations announced in 2004 and 5 regulations announced in 2005), and a legislation on occupational safety, health and working environment announced in 2005. To comply with the law, the entrepreneurs are required to establish the SH system at work sites. As a result, wider groups of workers/ types of work particularly the high risk sectors are better protected.

Policy factor: Policy towards "Kitchen of the world" which promotes safe food production, and One Tambon one Product (OTOP) strengthening program. (Tambon means sub-district.) The application of these two policies by related agencies has contributed to a more effective promotion of quality and safety in production activities.

#### **(2) Sustainability**

Organizational factor: Human resource with high technical competence and adequate budget allocation are crucial factors contributing to the sustainability of the Project activities such as the development of SH curriculums and broadening networks with strategic partners i.e. NGOs, consultancy firms and academic institutes.

Linkages and cooperation with International Organizations: Technical and financial assistances for example from ILO/JAPAN Multi-Bilateral Program, the World Bank as well as ASEAN OSHNET (Occupational Safety and Health Network) have contributed not only to the staff development but also the enforcement of the important joint policy measures.

### **3-3 Factors that have inhibited project**

#### **(1) Impact**

Organizational factors The government policy to freeze the increase of permanent officials makes it not possible for NICE to recruit more officials though there is a bigger demand. Recently, NICE is in the process of adjusting its working approach to be more flexible and able to mobilize cooperation from working partners to work with high risk industry and SMEs more effectively.

Socio-cultural factor Even though public relations in various forms with regard to OSH have been promoted by NICE but the majority of the people are not yet aware of OSH and not enough attention has been given to the implementation of safety system management. The report on occupational injuries tells that one of the important causes of the accidents/injuries is the carelessness for self protection of the responsible personnel. The interview with senior Inspectors also confirmed that the owners of some enterprises, in particular SMEs, do not establish safety system mainly because the worry about the cost, while the prevention measures did not receive much attention.

Lack of proactive working approach in public relations as well as positive measure to motivate OSH management particularly by medium and small enterprises including the promotion OSH as a national agenda.

#### **(2) Others**

The delay in the establishment of APO under MOL: As the Thai government has resolved in principle for setting up an APO, and the study result on international experiences on OSHAPO also indicated that an APO needs to be developed, but there is no clear conclusion yet on this matter.

### **3-4 Conclusion**

After the Project termination in 2002, the achievement of over all goal and project purpose is evaluated as high. The evaluation is based on the following three reasons. Firstly, the rates of injury occurrence per 1,000 workers indicate a trend of slightly decrease every year, even though it has not yet reached the over all goal target due to the strengthened functions of NICE. Secondly, 283,039 SH Inspectors have been trained since the Project begin until October, 2005. The average number of Inspectors trained per year after Project completion is higher than during the Project. Finally, research results were disseminated to wider target groups. Public relations were improved in various forms. These activities have raised awareness of wider public in particular the workers and entrepreneurs in OSH.

The sustainability of NICE in the field of counterpart personnel was evaluated as high. The reasons are as follows: (i) About 71% of the current officials at NICE headquarters are the C/Ps. The C/Ps who have been promoted to other Divisions in DLPW continued to work in close relation to occupational safety and labour protection. (ii) With additional budget allocated from Workmen's Compensation Fund, civil employees and temporary employee were hired on contractual basis. (iii) In addition, 89% of the C/Ps interviewed have gone through staff development activities more than once a year. Thus, the knowledge of NICE personnel is continuously refreshed and the technology transferred by the Project has been transferred from senior C/Ps to the junior staffs.

The utilization of the new building and workshop is evaluated as high. The construction of the new building was completed and equipped with equipments and machines supplied by JICA. It was used as offices of NICE and OSHID for training activities, laboratory, safety library and exhibition hall.

The utilization of equipment is evaluated as low because only 79% of the provided machines and equipments are still in good condition and being used in training activities and assessment of working environment at NICE and RICEs, while the rest are out of order or deteriorated. These machines were procured directly from Japan. The spare parts were not available in Thailand or sometimes too costly to repair. Moreover, the bio-lab was closed down due to the resignation of the responsible personnel.

According to the most recent organizational structure of NICE, NICE headquarters will give more emphasis on OSH promotion, development and service certification. Whereas, RICEs will provide guidance services to SMEs and strengthen the establishment of SH inspectors' network. Therefore, the roles of NICE will be more focused, it is evaluated as high.

With regards to the sustainability of Project effects, it is evaluated as high. (i) The average number of SH Inspectors trained per year after the Project is a little higher than during the Project. It is mainly the result of the out sourcing system that NICE has been used in the management of training organization. (ii) To maintain the quality of the training courses provided, NICE has recommended the private firms that experienced Inspectors should be included as trainers in the training team, while the monitoring and evaluation system for quality assurance and renewal of the license is also being improved. (iii) SH Inspector training curriculum generally meets the demands of private enterprises. (iv) Based on



knowledge and practical experience gained during the Project, many research projects were continuously conducted, manuals and guidelines also published. More action researches or research at worksite in close cooperation with the enterprise were managed. Publication of some reports and manuals were supported by the enterprise and funding agencies.

Conclusively, the Project has successfully strengthened the functions of NICE Headquarters to be more efficient and have a system for tools and manuals development necessary for the provision of OSH services despite some difficulties with the communication problems of some Japanese Experts. According to the results of the Ex-post Evaluation Study, it was clear that NICE has not only maintained the supported equipments and activities but further developed and expanded the coverage of the activities. Several adjustments have been made to make the functions more focused and to have a clear organizational structure. It was also expected that there will be transfer of technical knowledge within the organization especially from the Headquarters to Regional Centers.

Based on the above results, recommendations are developed and lesson learned is presented below.

### **3-5 Recommendations**

- Capacity Development of license for machines: in order to manage the certification function efficiently, OSH Certification Section needs capacity development of specialized area on provision of license for the controller of high risk machines including monitoring and evaluation system for the renewing of the license. Assistance from donors in this field may promote OSH further in Thailand.
- Strengthening of the roles of RICEs: RICEs are in a better position than the headquarters for working with enterprises at worksites, as RICEs are being located in the provinces in different regions of Thailand. To do this, NICE needs to provide RICEs with proper technical knowledge, better equipments and efficient monitoring and supporting system. Conclusively, RICEs can actively contribute to a proactive role of NICE in safety promotion if they are properly supported.
- More proactive public relations on OSH: For example the lessons learned from cases of Best and Good Practices on OSH managed by different types and sizes of the enterprises should be disseminated via publications, media and various forms of action oriented training.
- As NICE has limited personnel, the trained SH inspectors can function as one of NICE strategic partners as resource person in training activities as well as in dissemination of OSH information and positive experiences in SH management. At present there are only few active SH Inspector Networks, which were established at some provinces. Therefore, a clear plan and supportive measures for the strengthening of existing SH Inspector Networks and the establishment of the new ones should be developed.
- Maintaining and enhancement of the collaboration with academic institutes: Wider cooperation with academic institutes should be enhanced i.e. in the development of Occupational Safety Curriculum and educational activities for schools and higher educational levels, and in doing practical research in priority areas that supports the preparation of safety standards suitable with Thai condition, including the promotion OSH as a national agenda.
- Positive measures for motivation of OSH management: Positive measures should be arranged to support or motivate the establishment of safety system in the enterprises. For example low interest or no interest credit for medium and small enterprises, and the adjustment of the calculation and reimbursement system of the workmen's compensation fund for good practiced enterprises (reduction rate according to injury records).
- The collaborations with related agencies at national and international levels should be maintained and enhanced to seek for necessary technical assistances and to promote OSH together.

### **3-6 Lesson Learned**

- The true success of this Project is that the workers are protected from occupational injuries and diseases. At this point it is learned that the roles of RICEs, which are located in the provinces, are very important but they were not directly involved in the Project. Therefore, it should be noted that, the emphasis of the technical assistance for the organization like NICE should not cover only the headquarters but also pilot sites in the regions.
- Technical Transfer: Most of JICA experts were evaluated highly by Thai counterparts with respect of their knowledge and experience in the fields of OSH. However, some experts had difficulty in communicating in English. As a result the technical transfer could not be done efficiently. In order to avoid the preventable inhibiting factor, it is suggested that English language competency should be considered as a criterion for expert selection.
- Oversea training: In addition to technical transfer by short term and long term experts, oversea

training is another effective means for practically intensive learning. To make it more beneficial, it is proposed that the agreement on capability building of the counterparts including oversea training curriculum should be carefully adjusted again by mutual agreement of both parties prior to actual implementation. Moreover, the training documents should be all translated into English in order to avoid limitation to learning.

- For the research, training and service certification institution like NICE, technical assistance emphasizing the capability development of the C/Ps is very helpful for the strengthening of the functions of the implementing agency in charge. However, as the production technology changes rapidly, it is recommended that the supports for machinery and equipment for both the training activity and the assessment of working environment should be carefully considered. Outsourcing system can be alternatives for more efficient management of some activities.

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## **Abbreviations**

APO	Autonomous Public Organisation
C/Ps	Counterparts
DLPW	Department of Labour Protection and Social Welfare
ILO	International Labour Organisation
JICA	Japan International Cooperation Agency
MOI	Ministry of Industry
NICE	National Institute for the Improvement of Working Conditions and Environment
OSH	Occupational Safety and Health
OSHD	Occupational Safety and Health Inspection Division
PCM	Project Cycle Management
PDM	Project Design Matrix
RICE	Regional Center for the Improvement of Working Conditions and Environment
SMEs	Small and Medium Scale Enterprises
UNDP	United Nations Development Programme
WEA	Working Environment Assessment
WEI	Working Environment Improvement
WIND	Work Improvement in Neighbourhood
WISE	Work Improvement in Small Scale Enterprise
WISH	Work Improvement for Home Worker

## Chapter 1

### Outline of the Ex-post Evaluation Study

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#### 1.1 Background and the Purpose of the Study

Japan International Cooperation Agency (JICA) Thailand Office has decided to conduct an ex-post evaluation study on the “Project on the Strengthening of the National Institute for the Improvement of Working Conditions and Environment”(JICA-NICE), which was completed 3 years ago (May 2002).(hereinafter referred to as “the Project”) The results of this study will contribute to better-informed decision-making and will be shared by JICA and the counterpart organization, NICE.

The main objectives of the evaluation study are as follows:

- (1) To derive lessons and recommendations for the improvement of JICA Country Programs and for the planning and implementation of more effective and efficient projects.
- (2) To ensure accountability to taxpayers by producing the reports in both electronic and printed forms.

The questions specifically related to this project are:

- (1) What are the government of Thailand’s present policies for strengthening occupational safety and health (OSH)?
- (2) How far has the reviewing and/or upgrading of occupational safety and health legislation progressed in Thailand?
- (3) How has the transformation into an independent administrative institution affected the role of the center?
- (4) Are the manuals/guidelines or the training courses initiated by the Project practical at the regional level or for private enterprise?

Impact

- (5) How far has the overall goal been achieved since the terminal evaluation?
- (6) Have any unintended positive and negative effects been observed?
- (7) What factors contributed to positive and negative impacts?

Sustainability

- (8) How has the counterpart agency been maintaining the Project activities and services provided by the Project? (Policy, the institution’s capacity, financial, and technical aspects.)
- (9) What factors are contributing to or inhibiting the Project’s effects or sustainability?



## 1.2 Evaluation Team and the Study Period

The members of the Ex-post Evaluation Study Team are as follows:

Assignment	Name	Nationality
Researcher	Mrs.Sinee Chuangcham	Thai
Researcher	Mr.Kiatfa Tang-jaijit	Thai
Research Assistant	Ms.Somjai Lomarat	Thai

The study started on October 3, 2005 and is to be ended on January 16, 2006. The work schedule and work progress to date is summarized in the table below.

**Table 1-1 Work Schedule of the Ex-post Evaluation Study**

Activity	2005			2006
	October 3 <sup>rd</sup>	November	December	Jan.
A. Preparation Step	←→			
B. Field Study & Stakeholders Workshop		←→		
C. Mid-term Report preparation			←→	
D. Conduct Supplemental Study				←→
E. Write a Draft Final Report and Draft Summary Sheet				←→
F. Produce and submit a Final Report and Summary Sheet				*
G. Present evaluation results at JICA Thailand Office				*

Below is the outline of the work procedure and work progress to date, as of January 5, 2006.

### A. Preparation Step (October 3 – October 27, 2005)

- A.1 Team building: a team of three persons, comprising of two principal researchers from different fields and one research assistant, is formed.
- A.2 Develop an Evaluation Grid and Work Plan
- A.3 Consult with JICA Thailand Office to finalize the Grid.
- A.4 Prepare an interview guide and questionnaire based on the evaluation questions in the Evaluation Grid.

**B. Field Study and Stakeholders Workshop (October 28 – November 25, 2005)**

B.1 Conduct evaluations according to the Work Plan.

- Review additional project-related documents.
- Conduct group interviews and individual in-depth interviews with the Project counterparts and representatives of related agencies.

B.2 Present preliminary findings to a Stakeholders Workshop (November 25, 2005).

**C. Mid-term Report Preparation (November 27 – December 16, 2005)**

**D. Draft Final Report Preparation (December 28, 2005 – January 5, 2006)**

## 2.1 Outline of NICE Project

<b>Project Title:</b>	The Project on the Strengthening of the National Institute for the Improvement of Working Conditions and Environment (JICA-NICE Project)
<b>Project site:</b>	The National Institute for the Improvement of Working Conditions and Environment (NICE), 22/3 Baromrachonnee Road, Thaling Chan, Bangkok 10170, Thailand
<b>Period of Cooperation:</b>	June 1, 1997 – May 31, 2002
<b>Counterpart Agency:</b>	The National Institute for the Improvement of Working Conditions and Environment, the Department of Labour Protection and Welfare, the Ministry of Labour and Social Welfare, Kingdom of Thailand

### 2.1.1 Background of the Project

Industrial accidents and occupational illnesses in Thailand had increased due to the rapid development of industrialization. One of the objectives in the 7<sup>th</sup> National Economic and Social Development Plan (1992-1996) was to protect workers from industrial accidents and occupational illnesses.

Therefore, in 1994 the Thai government requested the Japanese government to extend technical cooperation to strengthen the functions of NICE, which is in charge of giving guidance, conducting research and studies, providing training etc. in order to establish and promote occupational safety and health standards. In response to the request, the Japanese government, through the Japan International Cooperation Agency (JICA) as an implementing agency, conducted a preliminary study and long-term study in 1996 and an implementation study in 1997. The Project was then commenced in June 1997. It established the Labour Protection Act, conducted Occupational Safety and Health (OSH) education, and promoted medical examinations etc. to prevent occupational hazards.

### 2.1.2 Framework of the Project

#### Overall Goal:

Workers are protected from industrial accidents and occupational illnesses.

**Project Purpose:**

Function of NICE is strengthened.

**Outputs:**

- 1) The technical capabilities of NICE are improved.
  - 2) Basic and advanced training courses for safety and health inspectors are improved.
  - 3) Training courses\* for persons in charge of safety and health management in enterprise are improved.
  - 4) Public relations by NICE with regard to safety and health are improved.
- \* Training courses: safety and health supervisor courses, construction supervisor courses, industrial physical courses, and industrial nurse courses.

**2.2 Stakeholders and Study Methods**

Based on the Final Report, which summarized the results of activities in five years of co-operation, the Team produced an evaluation plan and evaluation questionnaire as well as an interview guide for respective stakeholders as shown in the table below. In addition to interviewing and administering a questionnaire survey, a documentary search was done in every related organization.

Stakeholders		Study Methods
<u>Implementing Agency</u> 1. NICE 2. Department of Labour Protection and Social Welfare		- Individual In-depth Interview
<u>Direct Target</u> 3. NICE's Counterparts (including counterparts from OSHID)		- Group Interview - Individual Interview - Questionnaire Survey
<u>Indirect Target</u> 4. Trainees who participated in training courses for safety and health inspectors provided by NICE  5. Northeastern Regional Center (RICE, located in Nakhorn Rajasima Province) 6. JICA-NICE Japanese Expert	<u>Roles of indirect targets</u> - SH inspectors are important beneficiaries of the training courses and manuals developed by the Project. They are supposed to be responsible for the establishment of safety management systems at their worksite. In some provinces, like Nakhorn Rajasima, SH inspectors associations were formed and actively joined RICEs in OSH activities. - RICEs are responsible for the promotion of OSH at worksites, the assessment of the working environment and provision of SH advice. - The Expert interviewed was the JICA-NICE Project Coordinator.	- Individual Interview - Site Visit: to conduct interviews with trainee of safety inspectors training course and observe the occupational safety system managed by private enterprise
<u>Other related groups</u> 7. ILO  8. Department of Industrial Works, MOI  9. Department of Occupational Health and Safety, Faculty of Public Health, Mahidol University	<u>Roles of other related groups</u> - The ILO provided financial and technical support to NICE, before and after the Project i.e. for the publication of manuals and master plan, and for the development of training courses. - The MOI took part as a member of a Tripartite Committee. Within the MOI there is an Office of OSH which has similar roles to NICE. - Mahidol University is actively involved in many OSH research projects and in the preparation of manuals on occupational safety.	- In-depth Interview



The technical cooperation between JICA and the Department of Labour and Welfare through the Project has contributed to a strengthening of the technical capabilities of NICE and the DLPW in the field of occupational safety and health. The Project dealt mainly with human resources development through technology transfer, particularly with regard to the NICE headquarters and the DLPW as follows:

- Dispatch of long-term experts on industrial safety and occupational health.
- Dispatch of short-term experts in the field of specialized areas.
- Counterpart training in Japan.
- Provision of machinery and equipment.

The report on the impacts and sustainability of the supported activities and the project outputs of the Project follow in this chapter.

### **3.1 Impact of the Project**

#### **3.1.1 Impact attained by the overall goal**

The overall goal of this Project is “to protect workers from industrial accidents and occupational illnesses”, and its objectively verifiable indicator is that the number of occupational accidents and illnesses should be decreased to the level of less than 26 per 1,000 workers by 2002.

At the end of the Project, the overall goal was not yet achieved but the number of injuries and illnesses declined significantly from 36.24 per 1,000 workers in 1998, the first year of the Project, to 29.20 in 2002, the last year of the Project period. However, even up until 2004, the total number of injuries, 29.18 per 1,000 workers, has not yet reached the declared target.

**Table 1 Occupational Injuries or Illnesses from 1995 – 2004**

Year	Number of Employees	Injuries (case)	(%)	Injuries per 1,000 workers (case)		Rate of increase /decrease from last year	
				Total	Temporary Disability	Total	Temporary Disability
1995	4,903,736	216,335	4.41	44.12	15.10		
1996	5,425,422	245,616	4.53	45.27	15.64	2.61	3.57
1997	5,825,821	230,376	3.95	39.54	12.84	-12.66	17.90
1998	5,145,830	186,498	3.62	36.24	11.66	-8.35	-9.19
1999	6,321,872	171,997	2.72	32.32	10.20	-10.82	-12.52
2000	5,417,041	179,566	3.31	33.15	9.69	0.02	-5.00
2001	1,544,436	189,621	3.42	34.20	9.42	3.17	-2.79
2002	6,541,105	190,979	2.92	29.20	8.12	-14.62	-13.80
2003	7,033,907	210,673	3.00	29.95	8.10	21.90	-2.00
2004	7,386,825	215,534	2.92	29.18	7.79	-2.57	-3.80

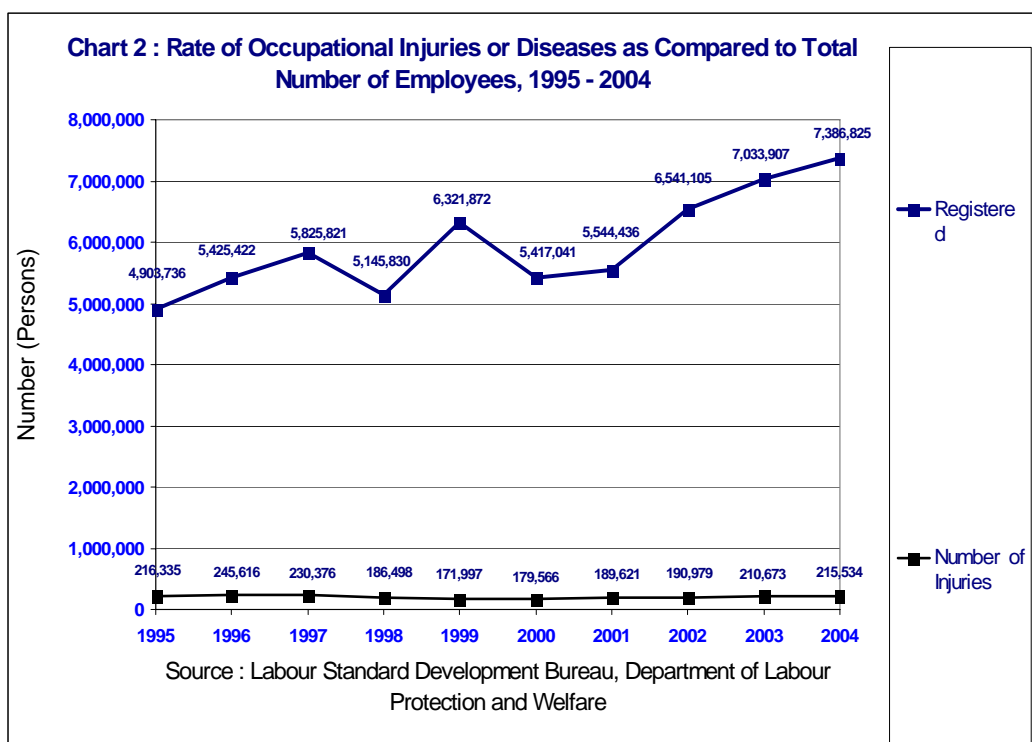
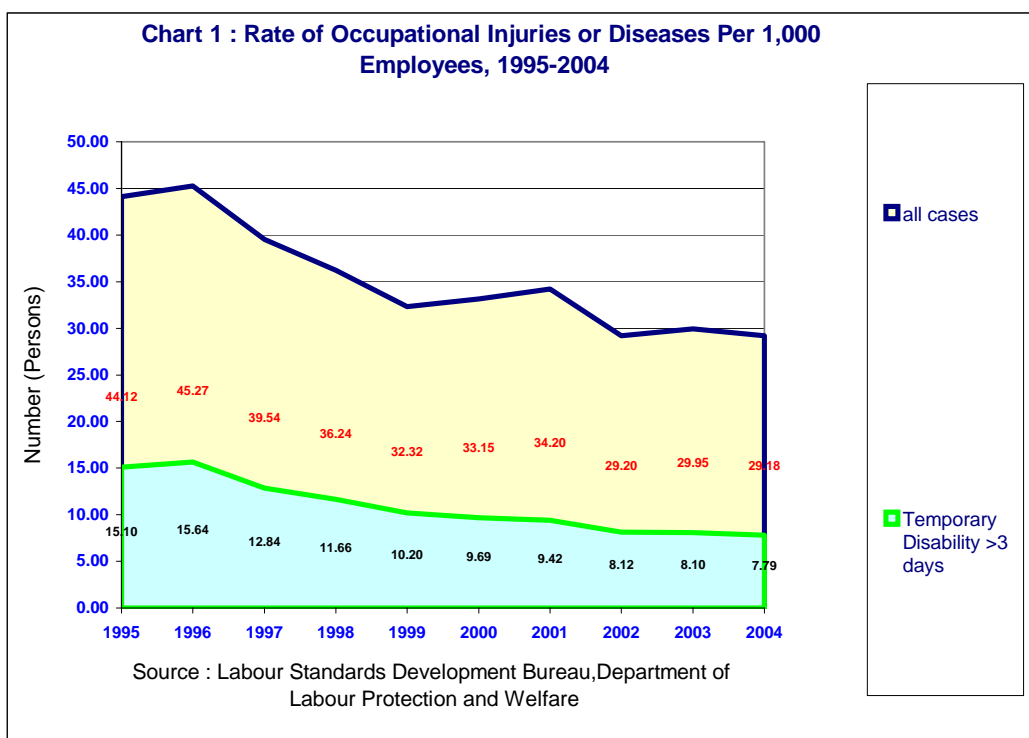
Source: NICE Annual Report, 2004

On this matter, NICE explains the following:

- Instead of the total injuries, one should look at the number of temporary disabilities or the workers who were injured and took leave for more than three days, which should be the focus of safety promotion because injuries needing leave of less than three days mean minor injuries. If we analyze temporary disabilities, one can see that the total number declined rapidly from 15.10 in 1995 to 7.79 per 1,000 workers in 2004.
- The set target at 26 per 1,000 workers was too high and NICE itself did not have much experience when the task was set. Finally it was agreed within the Ministry that the target should be changed from counting the reduction by the number of injuries per 1,000 workers to counting the reduction by percentage. In 2002, it was announced that the new target of the DLPW was to reduce the number of injuries by 10% every 5 years or 2% per year. If analyzed accordingly, the decrease in the rate of injuries has in fact, achieved the new target.

In conclusion, the rate of injury occurrence per 1,000 workers indicates a trend of a slight year-on-year decrease, even though it has not yet met the overall target. (See Chart 1 and Chart 2.) This was due to the fact that there is a continuous increase in the registration of the number of workers every year. The comparison between the increase in the rate of newly registered workers with the annual rate of injuries, shows that the former is much higher than the latter. If analyzed according to the new target set in 2002, the rate of injuries has achieved the goal. The achievements are derived from the impacts from (i) strengthened

functions of NICE, by which 283,039 SH Inspectors have been trained since the Project began until October 2005, (ii) the disseminated research results and (iii) public relations in various forms. All these activities have raised the awareness of the wider public and in particular, workers and entrepreneurs. Therefore it is evaluated that the Project has considerably large and positive impact on the reduction rate of the occurrence of occupational injuries and illnesses.



### 3.1.2 Impact not anticipated at Project Completion

Higher demand for SH inspectors training requires more efficient quality control of the outsourcing system: many private firms from all over the country have been established and have applied for the Organization of the SH Training Courses license. After some years, observations were made by both trainees and responsible personnel at NICE that some firms have problems with declining quality. Some of the trainers arranged by the firms do not have practical experience with OSH.

At present, NICE is considering the improvement of the selection criteria, and monitoring and evaluation processes to make sure that the certified firms have a consistent standard. In particular, a careful assessment of the experience of the training team was made. Recommendation was also given to the firms that the SH Inspectors who have long time direct experience should be involved as trainers in the training team.

### 3.2 Sustainability

The sustainability of the Project results from Project completion to the present is evaluated into three levels which comprise: high, maintained or sustained, and lower than at Project completion.

Level of Result	Explanation
<b>High</b>	It is expected high that the Project benefits are likely to sustain after the discontinuation of JICA's assistance, based on the analysis on the retention of the Project outcomes in terms of technical, organizational and financial aspects.
<b>Maintained</b>	It is expected high but not higher than the above that the Project benefits are likely to sustain after the discontinuation of JICA's assistance, based on the analysis on the retention of the Project outcomes in terms of technical, organizational and financial aspects.
<b>Low</b>	It is expected low that the Project benefits are likely to sustain after the discontinuation of JICA's assistance, based on the analysis on the retention of the Project outcomes in terms of technical, organizational and financial aspects.

#### 3.2.1 Technical Aspects

##### **(1) Completion of the construction and utilization of the new building and workshop: evaluated as high**

According to the Project design, RTG had to construct a new building and a workshop. However, due to the budgetary situation on the Thai side, the construction had to be delayed. By the end of the Project in May 2002, the construction of the new building and workshop was still under way. The construction was completed in mid 2003, and a ceremony for the official opening was organized on October 29, 2003. The eight-storey building is now

being used as the offices of NICE and OSHID. It has facilities for training and inspection activities such as a large meeting room with 300 seats, five small meeting rooms, one lab, a safety library and an exhibition hall on the first floor. The equipment provided by JICA for the laboratory has also been moved and installed in the lab in the new building as planned.

At present, there is enough space for diverse activities. The large meeting room is being used regularly for inspector training and conferences on OSH. However, as NICE has completely transferred the responsibility for the organization of training for SH inspectors to qualified consulting firms, most of the training is being organized outside (in the regions). Only the last two days of the training course for senior managers, for which there is an agreement between NICE and the consulting firms, are organized at NICE. Then the participants can learn more directly from NICE staff and are able to attend the safety workshop. In addition, training and workshops for DLPW staff on OSH are also regularly organized at NICE.

This topic is evaluated as high, because the equipment and machinery provided by JICA has been securely installed in the new building and maintained. The facilities have continued to be utilized for training activities and conferences on OSH.

## **(2) Utilization of supplied machinery and equipment: not evaluated so high**

Being a research and training institute on OSH, alongside human resources, having the appropriate equipment and machinery is another crucial factor that enables NICE to work more efficiently. For this purpose, JICA has provided NICE with machinery and equipment worth approximately 153 million yen. Some of this was the Expert's accompanying equipment which was worth approximately 5.7 million yen. At present, some equipment, especially portable equipment for SH assessment, has been given to RICEs in order that RICEs will be able to provide services upon request from SMEs in their respective provinces more efficiently.

The results of the field survey indicated that there are both positive and negative observations towards the equipment support. One of the common observations was that most of the equipment is useful but there are difficulties in purchasing spare parts for some equipment in Thailand (equipment that was purchased and imported directly from Japan) and some was too expensive. Therefore it is not possible for NICE to repair some equipment and machinery. When necessary, NICE purchased new equipment in Thailand i.e. computer programs and cameras etc. (For more information on the condition of the machinery and equipment provided by JICA see Annex 1.) From the list shown in Annex 1, one can see that 79% of the machinery and equipment provided is still in good condition and is being used in training activities and the assessment of working environments etc.



Not only the deteriorated condition of the provided equipment mentioned above but also the changes in responsible personnel and the transferring of the responsibility of SH inspectors training organization from NICE to the private sector have created the following problems on the sustainability of the utilization of equipment and machinery:

- The bio-laboratory had to be closed down after the resignation of the C/P a few months ago as there was difficulty in the recruitment of a medical technician as replacement. However, as there are many other organizations, such as Mahidol University, private sector labs and the laboratories of universities in the region who can provide efficient services for bio-assessment including laboratory analysis, there should be no problem for the enterprises in need. However, a careful consideration should be made on how the equipment provided by JICA in the bio-lab can be used more efficiently (instead of just closing down).
- Regarding the training activities for Occupational Safety and Health Inspectors, it was planned to use textbooks, models and training tools as well as the equipment and machinery provided in the training process. However, since NICE transferred the responsibility for the training organization for SH inspectors to qualified consultancy firms, fewer training courses are being organized at NICE. Moreover, as we all know that production technology changes rapidly, the equipment and machinery being used in many enterprises is now more advanced than that provided for NICE. As a result the machines provided and some tools are not as effectively used as before. This, however, does not mean that the training courses are not effectively organized.

To sum up, as the bio-lab has been closed down and some tools are not as frequently utilized as before, though RICEs and other sections are still active in the assessment and analysis of working environments, the utilization of the provided equipment is not evaluated as high.

### **3.2.2 Organizational Aspects**

#### **Current Situation of Counterpart Personnel**

##### **(1) Human resources: evaluated as high**

The total number of government officials of NICE at present is 72, which is similar to the Project period. It includes 35 officials working at 12 RICE Centers all over the country (two or three officials per center); the other 37 officials are working at NICE headquarters.

From the survey on counterpart personnel at the headquarters after the Project, it was learned that four C/Ps have resigned, one C/P has died and seven C/Ps have been promoted to higher positions at other Divisions within the DLPW. The replacements for the 12

personnel have already been made. As a result, about 71% of the current officials at NICE headquarters are counterparts who have been working at NICE since before the Project until the present.

The survey results also revealed the fact that, the resumed growth of industrial development after the economic recession in Thailand and the impacts of the enactment of the Labour Protection Act have put NICE under increased demand for OSH services from its clients. As NICE has a limited number of government officials who are not able to cope with the workload, additional budget for hiring extra employees has been allocated to NICE. With the extra budget, which was subtracted from the Workmen's Compensation Fund (Office of the Workmen's Compensation Fund, Social Security Office, DLPW), 42 civil employees on four-year contracts and another 50 temporary employees on annual contractual bases were hired in 2005. These employees were assigned to work at NICE headquarters and at RICEs.

In conclusion, the total number of government officials of NICE was maintained at 72 persons. The counterparts of the Project made up 71% of the current government officials at the headquarters. The C/Ps who have been promoted to other Divisions in the DLPW have continued to work with close regard to occupational safety and labour protection. With the availability of additional budget from the Workmen's Compensation Fund, civil employee and temporary employees have been hired on contractual bases to work at the headquarters and at RICEs. Therefore, the sustainability of the Project in terms of human resources is evaluated as high.

## **(2) Staff development on OSH: evaluated as high**

During the field study period of the ex-post study, many interviews with representatives of different parties were conducted. It was confirmed that the technical capabilities of NICE counterparts, especially the senior officials, are well recognized and they are seen as experts in specialized areas by related parties. Moreover, during one of our visits to NICE we met with a group of new employees, about to be assigned to work at RICEs, being trained on how to use the equipment by senior counterparts.

During the interviews at NICE, observations about the problem with English language competency of some Japanese Experts was also been made by the C/Ps.

According to the survey results regarding staff development on OSH after the Project, 89% of the interviewees answered that they have undertaken staff development activities more than once a year. Mrs. Paijit Krongkittchoo, Administration Section Head, explained that according to the organization's KPI (Key Performance Indicators) each member of staff should undergo staff-development activities at least once a year: activities such as training,

workshops or OSH conferences. To fulfill the KPI, NICE has provided support for necessary expenses such as registration fees, transportation and per-diem expenses. Besides the government budget, NICE also received financial support for staff development activities from related agencies. The ILO in particular has invited two or three members of NICE staff to attend national and international training courses/ conferences every year. In addition, knowledgeable speakers have frequently been invited to give talks at NICE.

Through all these activities, the knowledge of NICE personnel is refreshed and the technology transferred by the Project delivered from the senior counterparts to the junior staff members. Therefore, it is considered the sustainability in staff development aspect is evaluated high.

**Table 2 Number of NICE Personnel Received Capacity Development on OSH after Project Completion**

Capacity development	C/Ps		C/Ps attended training in Japan	
	number	%	Number	%
1. Received				
- more than once a year	5	71	8	89
- once a year	-	-	1	11
2. Not received	2*	29	-	-
Total	7	100	9	100

**Remark:** \* not received: because the responsibility of the interviewees is not related to the academic roles.

**(3) Another adjustment of organizational structure for another step of development: evaluated as high**

After the completion of the Project there were several adjustments with regard to organizational structure, initiated by NICE personnel themselves, in an attempt to be more focused and to better respond to the greater demand of advisory services – especially from SMEs. A decision was made in November 2005 by the Working Group for the In-house Improvement of Occupational Safety Organization Structure, that NICE would reorganize themselves internally and be divided into four Sections and twelve Regional Centers. (See Annex 6 for more information on the NICE organizational structure during the Project and the most recent.)

The new structure clearly indicates that NICE is entering into another step of development by which the roles and responsibilities of each section are specified. They decided to remove some roles which could more effectively be taken care of by academic institutes and consultancy firms; roles such as research activities and training organization

for SH inspectors. Thus, NICE headquarters will place more emphasis on OSH promotion, development, and service certification whereas RICEs will actively provide guidance services to small and medium enterprises (SMEs) and strengthen the establishment of the SH inspectors' network.

Furthermore, it was agreed upon by NICE and OSHID that closer cooperation between the two divisions would be managed. Hopefully this will pave the way for a more efficient organization. This adjustment seems to fit well with the national policy towards the strengthening and preparation of SMEs and one Tambon one product (OTOP) (Tambon means sub-district) for the export market where OSH issues need to be taken into consideration. Therefore, it is evaluated as high.

### 3.2.3 Financial Aspects: evaluated as high

From the table below, one can see that the budget of NICE for FY 2005 is high. The Administration Section Head explained that, the extra budget was for buying cars for RICE Centers, for the maintenance of the new building, as well as for the repair and maintenance of the mobile training car which was provided by the Project.

The budget allocations show the concerns and commitment of the Thai government in not only maintaining the existing capability but also further strengthening NICE headquarters and RICEs to be able to work more efficiently in coping with wider targets. Therefore the financial aspect is evaluated as high.

**Table 3 The Budget of NICE During 2003 – 2005**

<b>Year</b>	<b>Financial Support</b>	<b>Budget (Mill. Baht)</b>
2003	DLPW Annual Budget allocation	20.70
2004	DLPW Annual Budget Allocation	24.00
2005	DLPW Annual Budget Allocation(1)	31.54
	Budget for the Organization of ASEAN OSHNET Conference (2)	7.66
<b>Total (3)</b>		<b>83.90</b>

**Source:** Administration Section Head, NICE, November 2005

**Remarks:**

- (1) Annual Budget Allocation includes budget for Safety Week Project.
- (2) The responsibility for the organization of International Conferences will be rotated among member countries of the network.

- (3) This total budget does not include financial contributions from related parties in conducting workshops, research studies, the publication of some copies of manuals and guidelines, and sending NICE staff to workshops.

### 3.2.4 Sustainability of the Project Effects

#### (1) Safety and Health Inspectors training: evaluated as high

Regarding activities for Occupational Safety and Health Inspectors, NICE has been putting a lot of effort into this activity. After five years of the Project, more than 150,000 OSH personnel of enterprises were trained. The table below illustrates the statistics of SH inspectors attending training courses from 1997 – October 2005. It should be noted that the number of trainees for 1998 was exceptionally high due to a special request from the Minister for the MLPW that about 100,000 personnel be trained in that year. Therefore, the calculation for the average number of trainees trained per year during the Project period does not include the figure for 1998.

The average number of SH inspectors trained per year after the Project is a little higher than during the Project. It is mainly the result of the out sourcing system that NICE has been using in the management of training organization. The contracted firms are responsible for preparing text books and the tools for training which are checked by NICE. The OSH Service Certification Section only controls the quality of the training and organizes final tests for the inspectors. (Four times per year, there are about 800-900 registered trainees at each test.) Only the inspectors who pass the test receive certificates, otherwise they have to repeat the training. Therefore, the SH inspectors training is evaluated as high.

**Table 4 Number of Safety and Health Inspectors Attending Training Courses  
from 1997 – Oct. 2005**

Year	Level	Senior Manager	Manager	Supervisor	Basic	Total
	1997	491	2,126	8,595	159	11,371
During JICA- NICE	1998	1,412	22,463	71,513	639	96,027
	1999	717	2,535	8,125	129	11,503
	2000	5,803	2,218	9,405	97	17,523
	2001	1,718	1,896	7,522	341	11,477
	2002	2,537	23,151	19,705	811	46,204
	<b>Total 6 yrs.</b>	12,678	54,389	124,865	2,173	194,105
	<b>Total 5 yrs.</b>	11,266	31,926	53,352	1,534	98,087
	<b>Trainee/year</b>	2,253	6,385	10,670	307	19,616

Year	Level	Senior Manager	Manager	Supervisor	Basic	Total
After JICA-NICE	2003	1,742	6,133	16,154	902	24,931
	2004	2,120	7,735	24,844	1,387	36,086
	Oct.05	985	5,469	20,029	1,434	27,917
	Total	4,847	19,337	61,027	3,723	88,934
	Trainee/year	1,616	6,446	20,342	1,241	29,645

Source: OSH Service Certification Section, NICE, November 2005

**Remarks:**

- (1) The total of five years means the number of SH inspectors trained from 1997 to 2002 excluding 1998.
  - (2) The calculation of the average number of trainees/year during the Project does not include the year 1998 as the number of trainees in 1998 was irregularly high.
- (2) How do the training curricula meet with the demands of private enterprises?: evaluated as maintained and sustained**

**Table 5 Relevance of the Training Curriculum**

Level	Persons	%
Much	6	35
Moderate	11	65
Little	-	0
Total	17	100

The interviews with a Senior Manager, who owns a tour company, and the president of the SH Inspectors' Association of Nakhorn Rajasima province reflected that the SH inspector training course provides the necessary basic knowledge about OSH and insightful information regarding their rights and who to contact. Judging by their opinions, the curriculum generally meets the demands of private enterprises. However, when they were asked why many enterprises did not apply what they had learnt, they explained that the lack of incentive was the major reason for not implementing safety management. They stressed that the lack of incentive comes from the worry about the cost of the establishment of safety systems, having no clear evidence of the benefits that the enterprise will get from the implementation, and having limited information on easy and cheap technology for OSH. All of these reasons often hinder private enterprise, especially small establishments, from the proper management of safety systems.

**(3) The role of NICE in the promotion of occupational safety at the workplace: evaluated as high**

Through the changes elaborated above, NICE has gradually accumulated knowledge and experience in functioning as a certifying organization of OSH services. It has also allowed the OSH Certification Section to coordinate and improve the expansion of safety promotion projects such as the “Zero Accident Project”, which was initiated in the year 2000. In the beginning it covered only industry and construction; at present all sectors, big and small are included. Further curricula have also been developed such as:

- Training courses on safety promotion in schools and academic institutes
- Training on WIND Technique for Farming Leaders in Surin Province in collaboration with the Department of Agricultural Extension, 2004
- Training on WISCON Techniques for DLPW staff (representatives from NICE headquarters, RICEs and Provincial Offices of Labour Protection and Welfare) with financial support from the ILO, November 2005 etc.

It is therefore clear that the technology and knowledge provided by JICA’s assistance has laid firm ground for NICE and enabled not only the maintenance of the supported activities but also further improvements and expansion of the Project. The promotion of occupational safety at workplace is therefore evaluated as high.

**(4) Research activities and the production of manuals and guidelines: evaluated as high**

Based on the knowledge and additional practical experience in conducting research on occupational accidents and the assessment of working environments gained from the Project period i.e. the utilization of measuring equipment, research design, analyses of the results and report preparation as well as the production of manuals and guidelines, many research projects have been continuously conducted even since the Project completion. Another 21 manuals and guidelines based on the research findings were also published. (See Annex 1 for more detail on publications.) The Industrial Hygiene Section Head explained that NICE has recently changed from survey and basic research to more action research or research at the work site in close cooperation with the private sector. The research questions derive from the problems being faced by the enterprise. The publication of some research reports and manuals has been supported by enterprise and funding agencies. However, due to a lower annual budget for publication, the number of copies of research reports per topic was generally lower than in the Project period except for those supported by enterprise. New publication and the ones produced during the Project were distributed to target groups and stakeholders on various occasions such as SH Inspectors training. Many copies were also sent to RICEs for further distribution.

Beside research reports, researchers were encouraged to write articles or present their findings in national and international conferences. The Safety Newsletter being published by NICE and Safety @ web ([www.nice.labour.go.th](http://www.nice.labour.go.th)) are other channels where information on safety is effectively disseminated.

Many C/Ps remarked that they had the skills in writing/preparing manuals and guidelines, and the idea that the information should be produced in various forms for wider dissemination, mainly from working with JICA Experts.

**Table 6 Practicality and suitability of manuals and guidelines in current condition**

Level	Persons	%
Much	7	44
Moderate	8	50
Little	1	6
Total	16	100

**(5) Organization of Annual Safety Week: evaluated as high**

“Annual Safety Week” has been organized continuously as a national event for 19 years in order to promote occupational safety. NICE has played a key role in organizing the events in cooperation with academic institutes, the private sector and related government agencies. Publications, posters and media on OSH produced by NICE were displayed and distributed in the exhibitions and conferences. The mobile health examination set was also used not only as a means for health check-ups but also as a tool to call for the attention of participants. Nowadays, the events are organized in Bangkok and in the regions. One can say that the Annual Safety Week has become an opportunity where diverse target groups (workers, owners of private enterprises, students and officials) can join in and benefit.

Even though the organization of this event was initiated long before the Project, the publications and media produced by the Project as well as technical advice on the preparation of public relations and exhibition materials provided by the Short-Term Experts has been applied in the organization of Annual Safety Week since then. Based on the facts that the Project substantially strengthened the capacity of NICE, which has consequently contributed for the improvement of occupational safety, it is evaluated high in this aspect.



### **3.3 Analysis of Factors of Impact and Sustainability**

#### **3.3.1 Promoting Factors**

##### **(1) Law and regulations:**

Since the announcement of the “Labour Protection Act” in 1998 until the end of the Project, neither regulations nor notifications in the field of occupational safety and health under the Act have been issued. By 2002, several newly drafted regulations were still in the process of consideration by the National Tripartite Committee on Occupational Safety, Health and Environment. Until 2004, four Ministerial Regulations on occupational safety were issued, followed by the enactment of another five Regulations in 2005. As a result, wider groups of labour / types of work were protected such as home workers and workers working with chemical hazards including regulations for working environment etc. The enterprises are required to provide training on necessary knowledge as well as an establishment of a proper safety system.

##### **(2) Policy factors:**

The policy and the enactment of the followings have contributed to the sustainability and wider impacts of the Project to a certain level, which leads to evaluate them as one of the promoting factors:

- The policy towards “Kitchen of the world” and the promotion of safe food production
- “OTOP Strengthening Programme” aiming at export markets
- FTA agreements between Thailand and partner countries etc.

The mentioned policies have directly and indirectly roused the interest of related agencies such as the Department of Agricultural Extension and production groups regarding occupational safety. It was learnt from the interviews with RICE personnel that they have received more requests for working environment assessment services and advice from personnel of other agencies at the provincial level as well as from enterprise.

##### **(3) Linkages and cooperation between NICE and international organizations**

OSH is an international concern. Many countries are joining efforts to upgrade safety and health management systems and international networks have been established. After the Project, NICE has expanded its linkages and cooperation with international organizations in various forms. The collaborations with international organizations and OSH networks are not only important for the development of NICE itself but also crucial for the enforcement of important joint policy measures. The cooperation between NICE and international organizations is therefore considered as one of the promoting factors. The following are

examples of collaborations with international organizations and assistance that NICE received after the Project:

- a. The technical and financial assistance from the World Bank to the Ministry of Labour and Social Welfare from 2002-2005, under the Country Development Partnership for Social Protection Project (CDP-SP), provided support for the study of three topics necessary for OSH development in Thailand, namely:
  - A Study on International Experience on Occupational Safety and Health Autonomous Organizations (APOs)
  - A Study on International Experience on the Enforcement of Occupational Safety and Health Law
  - A Study on International Experience on Occupational Safety and Health Information System
  
- b. Technical and financial assistance from the ILO/JAPAN Multi/Bilateral Programmes such as:
  - For the preparation of manuals and the development of training curricula on WISH, WIND and WISCON, where NICE has joined in the working process as one of the active participants/writers together with relevant agencies.
  - For the organization of the workshop and publication of the DLPW Master Plan for 2002-2006
  - Sending NICE staff to workshops and conferences etc.

The assistance from the ILO contributed to the expansion of the Project impacts and sustainability, in particular the further development of manuals and training curricula.
  
- c. ASEAN OSHNET: The Network covers 4 areas of coordinating works such as research activities, training activities, information and laws and standards. Each of which is responsible by the member countries: Indonesia is the Coordinator for Research Activities; The Philippines is the Coordinator for Training Activities; Malaysia is the Coordinator for Laws and Standards; and Thailand is the Coordinator for Information. Member countries also take turns in the organization of ASEAN OSHNET Conferences.

#### **(4) Organizational factors**

The human resources of NICE, with high technical competence and the consciousness to adjust the organizational structure and management system by themselves, is a key element in the sustainability of the Project after JICA. DLPW budget allocation, good equipment and the availability of manuals and training curricula are other supporting factors. Based on the above-mentioned resources, more coverage of services and wider

collaboration with diverse parties in the development and promotion of safety management system can be expected.

### **3.3.2 Inhibiting Factors**

#### **(1) Organizational and financial factors**

NICE has limited personnel when compared to the large demand. Though NICE has good equipment and machinery and has received quite reasonable budget allocations during the past few years, it was not enough for a quick adjustment. Because of the current socio-economic situation and government policy in freezing the increase of permanent government officials, it is not possible for NICE to recruit more officials. It is thus important that NICE adjusts its organizational management and working approach to become more flexible and to be able to mobilize cooperation and contributions from working partners, especially to be able to work with high-risk industries and SMEs more efficiently.

#### **(2) Socio-cultural factors**

Even though public relations in various forms by NICE with regards to safety and health have been promoted, but the Thai people in general still have limited understanding about OSH. As a result, not enough attention has been given to the implementation of safety system management. When people talk about production, many think of productivity and the quality of the products only (the output of the production process) not the safety of the production process and working environment. The interview with the senior inspectors also confirmed that the lack of incentives for the management of safety system caused mainly by the worry about expenses and not much concern was given to prevention measures. This condition provides a complicated scenario for NICE which requires good public relations and a more proactive working approach.

#### **(3) Limited information and understanding about OSH APO**

The Thai government has resolved, in principle, for the setting up of an APO under MOL. However, the APO concept is relatively new to the Ministry, thus a study is needed to provide the information for the DLPW and MOL concerning the planning and development of the OSH APO to be submitted to the cabinet.

The results of the study on APOs confirmed that an APO should be developed in any country. However at this stage, there is no clear conclusion on this subject matter yet.

### 3.4 Conclusions

After the Project termination, the sustainability of NICE in terms of utilization of the new building and workshop, it is evaluated as high with the following reasons. (i) The construction of the new building was completed and the equipment and machinery supplied by JICA were installed there. (ii) The new building was used as offices of NICE and OSHID. It has facilities for training activities, laboratory, safety library and exhibition hall.(iii) Training and workshops on OSH for SH Inspectors and DLPW staffs were organized regularly at NICE.

The utilization of equipment is evaluated as lower than Project completion due to the following reasons. (1) About 79% of the machinery and equipment is still in good condition and being used in training activities and the assessment of working environments at NICE and RICEs, while the rest is out-of-order or has deteriorated. (ii) Due to the resignation of the personnel responsible, the bio-lab was closed down.

In the field of counterpart personnel, human resource was evaluated as high. The reasons are as follows: (i) The total number of government officials was maintained at 72 persons. (ii) About 71% of the current officials at NICE headquarters are C/Ps. The C/Ps who have been promoted to other Divisions in the DLPW continued to work with close regard to occupational safety and labour protection. (iii) With additional budget allocated from the Workmen's Compensation Fund, civil employees and temporary employees were hired on contractual bases. In addition, (iv) 89% of the C/Ps interviewed have gone through staff development activities more than once a year. The Key Performance Indicators of NICE has stated that each member of staff needs to attend a capability-building activity at least once a year. Thus, the knowledge of NICE personnel is continuously refreshed and the technology transferred by the Project is passed from senior C/Ps to junior staff members.

Observing the latest organizational structure of NICE after several adjustments, NICE headquarters will give more emphasis on OSH promotion, development and service certification. By contrast RICEs will actively provide guidance services in particular to SMEs, promotion of OSH and strengthen the establishment of the SH inspectors' network. Therefore the roles of NICE will be more focused, it is evaluated as high.

With regard to the sustainability of Project effects it is evaluated as high. (i) NICE has been putting a lot of effort into the activities for Occupational Safety and Health Inspectors. The average number of SH inspectors trained per year after the Project is a little higher than during the Project. It is mainly the result of the outsourcing system that NICE has used in the management of training organization. (ii) The field study reflected that SH

inspector training curricula generally meets the demands of private enterprise, but the lack of incentive often hinders them, especially the small firms, from the proper management of safety systems. The lack of incentive comes from the worry about the cost of the establishment of safety systems, having no clear evidence of the benefit that the enterprise will get from the implementation, and having limited information on easy and cheap technology for OSH. (iii) Based on the knowledge and practical experience gained during the Project, many research projects were continuously conducted, manuals and guidelines also published even after the Project's completion. More action research or research at worksites in close cooperation with the enterprises was managed. The publication of some reports and manuals was supported by enterprise and funding agencies.

The achievement of overall goal and project purpose is evaluated as high base on the following reasons. (i) The rate of injury occurrence per 1,000 workers indicates a trend of a slight year-on-year decrease, even though it has not yet reached the overall target. The achievements are the impacts of the strengthened functions of NICE. (ii) 283,039 SH Inspectors have been trained since the Project began until October, 2005. The average number of Inspectors trained per year after Project completion is higher than during the Project. (iii) Research results were disseminated to wider target groups. Public relations engaged in various forms. All these activities have raised the awareness of a wider public, in particular workers and entrepreneurs.

Conclusively, NICE is an essential organization for OSH management in Thailand. The Project has successfully strengthened the functions of NICE Headquarters in its efficiency and in having a system for tools and manuals development necessary for the provision of OSH services. According to the results of the Ex-post Evaluation Study, it was clear that NICE has not only maintained the supported equipment and activities but further developed and expanded the coverage of the activities. Many adjustments have been made to make the functions more focused and to have a clear organizational structure. It was also expected that there would be transfer of technical knowledge within the organization especially from the Headquarters to Regional Centers.

Finally, factors on the potential and limitations of NICE, that contributed to the sustainability and impact of the Project can be summarized as follows:

#### **(1) Potential of NICE**

- 1) NICE personnel have good knowledge and are well accepted by related parties in their expertise. NICE has equipment and machinery provided by JICA as well as that purchased by RTG. There are manuals and guidelines as well as training curricula on

OSH. It can therefore be expected that more publications and training courses on OSH will be developed.

- 2) NICE receives expectations from workers that they will be protected and have better working standards. The big demand of workers from diverse groups provide an increasing opportunities for NICE to expand the development of its services more aggressively.
- 3) Private enterprises expect that NICE will be able to advise them on safety management, and hope that with good practices, expenditure on investment and workmen's compensation will be reduced.
- 5) NICE has good relationships with networks of many parties at the implementing, national and international levels, such as networks of SH inspectors who can assist NICE as trainers and resource personnel, networks of qualified consulting firms that can organize training courses for inspectors or do the research work, assess and analyze the working environment, and linkages with international organizations on OSH and OSHNET etc.
- 6) NICE has partner organizations such as GOS, NGOs, funding agencies and academic institutes who have been working on OSH together. The contributions and cooperation with these organizations will enable NICE to extend the coverage of its services more efficiently.

## **(2) Limitations of NICE**

- 1) OSH is an integrated type of work, which requires active cooperation from related agencies in the promotion of OSH in Thailand such as MOH, academic institutes, NGOs and private enterprises etc. Even though the government has stressed the policy on safety at work sites, safe food and with the OTOP Project etc., it does not yet have any clear guidelines for integration and cross-department collaboration. Therefore, more practical measures and guidelines for the cooperation between relevant agencies are required.
- 2) The majority of Thai people are not aware of OSH.
- 3) NICE has a limited number of staff, many of whom are government employees hired on an annual contractual basis.
- 4) A lack of proactive public relations.
- 5) There is still a problem of access to entrepreneurs, particularly smaller ones.
- 6) Positive measures for motivation and support for OSH management, particularly for medium and small enterprises, are still lacking.

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#### 4.1 Recommendations

- Capacity Development on provision of license for machines: in order to manage the certification function efficiently, OSH Certification Section needs capacity development of specialized area on provision of license for the controller of high risk machines including monitoring and evaluation system for the renewing of the license. Assistance from donors in this field may promote OSH further in Thailand.

It coincides with the recommendation made by the JICA Expert in the Final Report that a qualification system, which is to be followed by training courses, should be established by NICE for operators and foremen who are engaged in dangerous and harmful work. The OSH Section Head confirmed that this plan is another proactive step in the attempt to reduce industrial accidents in priority high-risk workplaces which are expanding rapidly without any proper prevention and control measures. While NICE has limited knowledge and experience in implementing the qualification certification system, technical assistance from assistance donors will enable them to sustain and expand the Project effect in this aspect more effectively.

- Strengthening the roles of RICEs: RICEs are in a better position than NICE for working with enterprises at worksites as RICEs are located in the provinces in different regions of Thailand. (It is easier for the enterprises to come and ask for services from RICEs, and also easier for the RICEs to do site visits and cooperate with relevant agencies at the implementing level.) To do this, RICEs require technical knowledge, better equipment and a more efficient monitoring and support system between NICE and RICEs. In sum, RICEs can actively contribute to a proactive role of NICE in safety promotion if they are properly supported.
- More proactive public relations on OSH: for example, the lessons learned from cases of Best and Good Practices on OSH managed by different types and sizes of establishments should be disseminated via publications, the media and various forms of action-oriented training.
- The priority roles of the trained SH inspectors are to promote safety management at their respective worksites. However, as NICE has limited personnel, the trained SH

inspectors can function as one of NICE's strategic partners, as resource personnel in training activities as well as in the dissemination of OSH information and positive experiences in SH management. As SH Inspectors Networks have been formed in some provinces, a clear plan and supportive measures for the strengthening of existing SH inspector networks and the establishment of new ones should therefore be developed.

- Maintaining and enhancing collaboration with academic institutes: academic institutes have been good partners of NICE in the promotion of SH. In the years to come, wider cooperation between NICE and academic institutes should be enhanced i.e. in the development of Occupational Safety curricula and educational activities for schools and at higher educational levels, and in doing practical research in priority areas that supports the preparation of safety standards suitable for Thai conditions, including the promotion of OSH as national agenda.
- Positive measures for the motivation of OSH management: positive measures should be arranged to support or motivate the establishment of safety systems in enterprise, for example, low-interest or no-interest credit for medium and small enterprises, and the adjustment of the calculation and reimbursement system of the workmen's compensation fund for good-practice enterprises (reduced rate according to injury records).

#### **4.2 Lessons Learned**

- The true success of this Project is that the workers in Thailand are protected from occupational injuries and illnesses. At this point it is learned that the role of RICEs, which are located in the provinces, is very important but they were not directly involved in the Project. Therefore, it should be noted that, the emphasis of technical assistance for an organization like NICE should not cover only the headquarters but also pilot sites in the regions.
- Technical transfer: most of the JICA experts were evaluated highly by Thai counterparts with respect to their knowledge and experience in the fields of OSH. However, some experts had difficulty in communicating in English. As a result, the technical transfer could not be done efficiently. In order to avoid this preventable inhibiting factor, it is recommended that English language competency should be considered as a criterion for expert selection.



- Supply of equipment: some equipment and machinery, which was purchased and imported directly from Japan, is difficult to maintain as spare parts cannot be bought in Thailand or are too expensive. Moreover, the manuals which came along with the machines were in Japanese and have not been translated for the Thai counterparts. It is thus suggested that most equipment should be purchased locally. In the case where some equipment needs to be purchased from other countries, translation of the manuals and training on maintenance should be organized.
- Overseas training: in addition to technical transfer by short-term and long-term experts, overseas training is another effective means for practical intensive learning. JICA has a long record of experience in this kind of assistance. To be more beneficial, the following recommendations are proposed for consideration: the agreement on capability-building of the counterparts including overseas training was mostly designed a long time before it was actually implemented. The needs of the counterparts and the actual situation will be better suited if the training curriculum can be carefully adjusted, again by mutual agreement of both parties prior to the actual implementation. Moreover, the training documents should all be translated into English in order to avoid any limitations on learning.
- For a research, training and service certification institution like NICE, technical assistance of the kind emphasizing the capability-building of the C/Ps is very helpful in strengthening the functions of the implementing agency in charge. However, as the production technology changes rapidly, it is recommended that the supports for machinery and equipment for both the training activity and the assessment of working environment should be carefully considered. Outsourcing system can be alternatives for more efficient management of some activities.

## Annex 1

### Equipment and Machine supplied by JICA

1997	Name of equipment	Name of brand	Quantity	Section	Condition
1	Refractometer	Nikon	1	Industrial Medicine	Fine
2	Telemetric Metabolic Tester	Cosmed	1	Ergonomics	Electrochemical sensor Of O Analyzer and Infrared sensor of CO Analyzer deteriorated, Heart rate monitor deteriorated
3	Heart Rate & Body Temp Monitor	Metrosonic	1	Ergonomics	Deteriorated
4	Muscle Tester	Mega Mespec	1	Ergonomics	Out of order due to short circuit
5	Lumbar Motion Monitor	Chatanooga		Ergonomics	Connector to signal receptor is broken
6	Seat Accelerometer	Rion	1	Industrial Hygiene	Fine
7	UV Meter	UVP	2	Industrial Hygiene	Fine
8	Digital Microfilm Scanner	Canon	1	Information	Fine
9	Electronic Filing System	Canon	1	Information	Fine
10	Digital Color Film Recorder	Propalette	1	Information	Fine
11	Color Laser Printer	Hewlette Packard		Information	Still in use. Though some functions can not be operated but it was too costly to repair.
12	Copy Machine	Fuji Xerox	2	JICA, Administration	Out of order but too costly to repair as the spare parts are too expensive.
13	Color Copy Machine	Fuji Xerox	1	Administration	Fine
14	Video Projector	SONY	3	OSH Training	Fine
15	LCD Projector	Fuji Xerox	2	OSH Training	Fine
16	Data Backup Tape	Hewlette Packard	18	Information & RICE	Fine, distributed to RICEs.
17	CD Writer	YAMAHA	1	Information	Not in use,

					because low capacity not suitable for work.
18	CD Changer	Pioneer	1	Information	Still in use but low capacity.
19	4 Wheel Drive Car	TOYOTA	1	Administration	Fine
20	Mobile Training Unit	ISUZU	1	OSH Training	Fine
<b>1998</b>					
21	Noise Dose Meter	Larson	4	Industrial Hygiene	Fine
22	Portable Ambient Air Analyzer Sys	Foxboro	1	Industrial Hygiene	Fine
23	HPLC	Hewlette Packard	2	Industrial Toxicology	Fine
24	Gas Chromatography	Perkin Elmer	1	Industrial Toxicology	Fine
25	Spectro Photometer	Unicam	2	Industrial Toxicology	Fine
26	Portable Heat Stress Monitor	Metrosonic	1	Ergonomics	Software does not function.
27	3-D Motion Analyzer	Zbris	1	Ergonomics	Sensor is deteriorated.
28	Asbestos Analysis System	Nikon , Compaq	1	Industrial Toxicology	Monitor is broken.
<b>1999</b>					
29	X-Ray Diffractometer	Rigaku	1	Industrial Toxicology	Fine
30	Local Ventilation Model	Koken		Industrial Hygiene	Fine
31	3 ton Electric Hoist	Mitsubishi Elect	1	Machinery Safety	Fine
32	Power Pressing Machine	Noguchi Press	1	Machinery Safety	Fine
33	Planning Machine	Hitachi	1	Machinery Safety	Fine
34	Band Saw	Hitachi	1	Machinery Safety	Fine
35	Circular Saw	Eiwa Kogyo	1	Machinery Safety	Fine
36	Shearing Machine	Noguchi Press	1	Machinery Safety	Fine
37	Grinder	Hitachi	1	Machinery Safety	Fine
38	Disc Grinder	Hitachi	1	Machinery Safety	Fine
39	High Speed Cutting Machine	Hitachi	1	Machinery Safety	Fine
40	Press Break	Toyo-Koki	1	Machinery Safety	Fine
41	Compressor	Anesuto	1	Machinery Safety	Fine
42	Belt Conveyor	Hiko	1	Machinery	Fine

				Safety	
43	Gas Welder Set	Koikesanso	1	Machinery Safety	Fine
44	Welding Machine MIG	Daidokogyo	1	Machinery Safety	Fine
45	Arc Welding	Osakadenki	1	Machinery Safety	Fine
46	Cleaner	Hitachi	1	Machinery Safety	Fine
47	Cargo Sling Sample Set	Kimachikikai	1	Machinery Safety	Fine
<b>2000</b>					
48	Boiler Model	Bangkok Industrial Boiler	2	Safety Engineering	Fine
49	Pressure Vessel Model	Bangkok Industrial Boiler	1	Safety Engineering	Fine
50	Sampling System	Escourt ELF	10	Industrial Hygiene	Fine
51	Sound Level Meter	Rion	4	Industrial Hygiene	Fine
52	Accessories, Portable Ambient Air	Foxboro	1	Industrial Hygiene	Fine
53	Thermal Desorption	Perkin Elmer	1	Industrial Toxicology	Out of order
54	Fluorescent Detector	Hewlett Packard	1	Industrial Toxicology	Can not be used as there is no adapter
55	Accessories of Spectrophotometer	UNICAM	1	Industrial Toxicology	Fine
56	Freezer	Scientemp	1	Industrial Toxicology	Fine
57	Laboratory Density Meter	Anton Paar	1	Industrial Toxicology	Fine
58	Water Distiller	Usf Elga	1	Industrial Toxicology	Fine
59	Portable EMG	MEGA	1	Ergonomics	Data logger and 32 MB memory card is deteriorated.
60	Slat Belt Treadmill	Quinton Instru	1	Ergonomics	Fine
61	Ambulatory Blood Pressure Monitor System	Space labs Med	1	Ergonomics	Fine
62	Handgrip/Pinch grip Dynamometer	Biometric	1	Ergonomics	Fine
63	Spiro meter	Minato	4	Industrial Medicine	Fine, Three spiro meter were distributed to RICEs at Lampoon, Samutsakhorn, Songkla. One is kept at NICE.

64	Diagnostic Set		1	Industrial Medicine	Fine
65	Digital Height Weight Meter	Seca	1	Industrial Medicine	Fine
66	Software for Statistics	SPSS	1	Industrial Medicine, Hygiene, Ergonomics	Fine
67	Desktop Computer	Compaq	1	Ergonomics	Out of order
68	Notebook Computer	Compaq	2	Industrial Medicine	Fine 1 set , another is out of order and can not be repaired.
69	Video Camera	SONY	2	OSH Training , JICA	Fine
70	Digital Camera	SONY	2	OSH Training	Fine
71	TV Monitor	SONY	2	OSH Training	Fine
72	Video Recorder	SONY	2	OSH Training	Fine
73	Vision Screener	Titmus	3	Industrial Medicine	Fine, Two vision screeners were distributed to RICEs Chonburi, and Saraburi. One is kept at NICE.
74	Audio Meter	Madsen	3	Industrial Medicine	Fine, Two were distributed to RICE Nawa Nakhorn, and Rajaburi. One is kept at NICE.
75	UPS	Soltec	4	Industrial Toxicology	Fine
76	Digital Bubble Flow Meter	Humonics	2	Industrial Hygiene	Fine
77	Vibration Meter	Maestro	1	Industrial Hygiene	Fine
78	Dijital Lux Meter	Hioki	4	Industrial Hygiene	Fine
79	Heart Stress Measurement Unit	Questemp	2	Industrial Hygiene	Fine
80	Rectum Thermometer	Pysitemp	1	Ergonomics	Out of order
81	Lactate Analyzer	Lactate	1	Ergonomics	Out of order
82	Boiler Simulator	Yamatake	1	Engineering Safety	Fine
83	Building Model Type 1	ARRK	1	Construction Safety	Fine
84	Building Model Type 2	ARRK	9	Construction Safety	Fine
85	Tunnel Model	ARRK	1	Construction Safety	Fine

<b>2001</b>					
86	Scaffolding Training Set	A.C.Equipment	1	Construction Safety	Fine
87	Atomic Absorption Set	Perkin Elmer	1	Industrial Toxicology	Fine

### Expert's Accompanied Equipment

<b>1997</b>	<b>Name of equipment</b>	<b>Name of brand</b>	<b>Quantity</b>	<b>Section</b>	<b>Condition</b>
1	Desktop Computer	Macintosh	1	JICA	Out of order
2	Monitor	Macintosh	1	JICA	Out of order
3	Printer	Macintosh	1	JICA	Out of order
4	Software for Statistics 8.0	SPSS	1	JICA, Information	Fine
5	Tape Writer	KING JIM	1	JICA	Out of order
<b>1998</b>					
6	Flow Meter	SHIBATA	1	Industrial Hygiene	Fine
7	Anemomaster	KANOMAX	1	Industrial Hygiene	Fine
8	Laser Dust Meter	SHIBATA	1	Industrial Hygiene	Out of order, Did not repair as there is other method for the measurement.
<b>1999</b>					
9	Hot Stirrer	TGK	1	Industrial Toxicology	Fine
10	Aircon 2-CD Program	GIRIAN	1	Industrial Hygiene	Out of order and did not repair as there was limited demand.
11	Note Computer	Compaq	1	JICA	Out of order
12	Air Check	SKC	1	Industrial Hygiene	Fine
13	Software for Statistics 9.0	SPSS	1	Information	Fine
14	Candela Meter	Minolta	1	Ergonomics	Fine
15	Crane Model		1	Machinery Safety	Fine
16	Mix Roter	LUCHI	1	Industrial Toxicology	Fine
17	Test Tube Mixer	LUCHI	3	Industrial Toxicology	Fine
18	Digital Sphygmomanometer	OMRON	1	Industrial Medicine	Fine
19	Clinical Thermometer	OMRON	1	Industrial Medicine	Fine
20	Vial Kit	LUCHI	1	Industrial Toxicology	Fine

21	Tip Washer	LUCHI	1	Industrial Toxicology	Fine
22	Triple Timer	LUCHI	2	Industrial Toxicology	Fine
23	Stopwatch	SEIKO	2	Industrial Toxicology	Fine
24	Color Printer	EPSON	1	JICA	Fine
25	Scanner	Hewlett Packard	1	JICA	Out of order
26	CD-RW	Hewlett Packard	1	JICA	Fine
<b>2000</b>					
27	Drawing Software	TEC-PLOT	1	Industrial Hygiene	Fine
28	Maintenance tool		1	Industrial Hygiene	Fine
29	Impact Drill		1	Industrial Hygiene	Fine
30	Rotary Hammer Drill		1	Industrial Hygiene	Fine
31	Cord Reel		1	Industrial Hygiene	Fine
32	Cord Reel		1	Industrial Hygiene	Fine
33	Marble Mortar with Pestle		1	Industrial Toxicology	Fine
34	Stainless Mortar with Pestle		1	Industrial Toxicology	Fine
35	Ultrasonic Cleaner	Iuchiseieidou	1	Industrial Toxicology	Fine
36	Teflon Beaker		3	Industrial Toxicology	Fine
37	Digital Clamp Meter	Sanwa	2	Safety Engineering	Fine
38	Test Hammer		14	Safety Engineering	Fine
39	Insulation Resistance Tester	Yokokawa	1	Safety Engineering	Fine
40	Analogue Multi-tester	Sanwa	2	Safety Engineering	Fine
41	X-Ray Film Set		1	Industrial Medicine	Fine
42	CD-ROM Concise Imaging Atlas-Chest		1	JICA	Fine
43	Cardiothoracic Imaging		1	JICA	Fine
44	MO Drive	LMO	1	JICA	Fine
45	CD-Drive	Buffalo	1	Ergonomics	Fine
46	Transformer	Buffalo	1	Ergonomics	Deteriorated
47	Electrode Cord for EMG	Mega	2	Ergonomics	Fine
48	Electrode Lead	Nihonkoden	16	Ergonomics	Fine
49	Heart Rate Monitor	Polar Vantage	3	Ergonomics	Deteriorated
50	Data Processing	Polar Vantage	1		

	System				
51	Driver Drill	MAKITA	1	Machinery Safety	Fine
52	Trimmer	MAKITA	1	Machinery Safety	Fine
53	Blower	MAKITA	1	Machinery Safety	Fine
54	Disc Saw	MAKITA	1	Machinery Safety	Fine
55	Multi Fretsaw	Shinwa	1	Machinery Safety	Fine
56	Tool Set		1	Machinery Safety	Fine
57	Cord Reel		1	Machinery Safety	Fine
58	Transformer		1	Machinery Safety	Fine
59	Safety System for Disc Saw	Tagami	1	Machinery Safety	Fine
60	Safety System for Plate	Tagami	1	Machinery Safety	Fine
61	Adapter	Hitachi	1	Machinery Safety	Fine
62	Hose Set	Hitachi	1	Machinery Safety	Fine
63	Hose	Hitachi	2	Machinery Safety	Fine
64	Connector	Hitachi	1	Machinery Safety	Fine
65	L-Clamp		4	Machinery Safety	Fine
66	Safety Equipment Training Set		49	JICA	Fine
67	Show Case		2	JICA	Fine
68	Electronic Print Board	Panasonic	1	JICA	Fine
69	Software for Statistics	SPSS	1	JICA	Fine
70	Universal Oven	Jouan	1	Industrial Toxicology	Fine
71	Dual Syringe Dilutor	Hamilton	1	Industrial Toxicology	Fine
72	Software Acrobat V.4	Adobe	1	JICA	Out of date
73	White Board	Fuji	1	2F Meeting Room	Fine
74	Note Computer	Toshiba	2	JICA	Out of order
75	Note Computer	Toshiba	1	JICA	Out of order
76	Desktop Computer Set	Compaq, HP	1	JICA	Out of order
<b>2001</b>					
77	Boiler Safety Video Tapes		10	JICA	Fine



<b>2001</b>					
78	Demonstration Force on Spine Specification	Shitiporn Asso	1	Ergonomics	Fine
79	Demonstration of EMG by Sound Specification	Shitiporn Asso	1	Ergonomics	Out of order
80	Storage Oscilloscope	EZ	1	Ergonomics	Out of order
81	Mini-Skeleton	3B Scientific	1	Ergonomics	Fine
82	Lifting Demonstration Figure	3B Scientific	1	Ergonomics	Fine
83	Flexible Spine	3B Scientific	1	Ergonomics	Fine
84	Muscular Figure	3B Scientific	1	Ergonomics	Fine

### Local Purchase

<b>1997</b>	<b>Name of equipment</b>	<b>Name of brand</b>		<b>Section</b>	<b>Condition</b>
1	FAX Machine	Panasonic	1	JICA	Out of order
2	Safe	Leeco	1	JICA	Did not use. There was no manual.
3	Refrigerator	Mitsubishi	1	JICA	Fine
4	Desktop Computer	Machintosh	1	JICA	Out of order
5	Printer	Hewlett Packard	1	JICA	Out of order
6	Scanner	Hewlett Packard	1	JICA	Out of order
7	Chair	KING JIM	1	JICA	Fine
8	Mobile Phone	NOKIA	1	JICA	Out of order
9	UPS	Leonics	1	JICA	Fine
10	UPS	Leonics	1	JICA	Fine
11	Digital Camera	SONY	1	JICA	Out of order
12	UPS	Leonics	1	JICA	Out of order
13	Locker	Leeco	1	JICA	Fine
14	Polaroid Camera	Spectra	1	JICA	Out of order
15	Camera	OLYMPUS	1	JICA	Out of order
16	Table	KING JIM	1	JICA	Fine
17	FAX Modem	Zyxel	1	JICA	Out of order
18	FAX Modem	Sportster	1	JICA	Out of order
19	Book Shelf		1	JICA	Fine
20	Cordless Phone	Panasonic	1	JICA	Out of order
21	Telephone	Panasonic	1	JICA	Out of order
22	Book Shelf	Lucky	2	JICA	Fine
23	Book Shelf	Lucky	3	JICA	Fine
24	Chair	KING JIM	7	JICA	Fine
25	Chair	KING JIM	1	JICA	Fine
26	Transformer	Protech	2	JICA	Out of order
27	Book Shelf	Lucky	2	JICA	Fine
28	Book Shelf	Lucky	2	JICA	Fine
29	Chair	KING JIM	1	JICA	Fine

<b>1998</b>	<b>Name of equipment</b>	<b>Name of brand</b>	<b>Quantity</b>	<b>Section</b>	<b>Condition</b>
30	Desktop Computer Set	Compaq	1	JICA	Out of order
31	Printer	Hewlett Packard	1	JICA	Out of order
32	Desk for Desktop Computer Set	Moflex	1	JICA	Fine
33	Desk for Printer	Moflex	1	JICA	Fine
34	Desk for Desktop Computer Set	Moflex	1	JICA	Fine
35	Mobile Pedestal	Moflex	1	JICA	Fine
36	ZIP Drive	Iomega	1	JICA	Fine
37	ZIP Drive	Iomega	1	JICA	Fine
38	Handy Video Camera	SONY	1	JICA	Out of order
39	Bus Bridge	Interface	1	Ergonomics	Deteriorated
40	Centrifuge	Kokusan	1	Industrial Toxicology	Fine
41	Angle Rotor	Kokusan	1	Industrial Toxicology	Fine
42	Hot Stirrer	Stuart Science	1	Industrial Toxicology	Fine
43	Mini Wave	Taitec	1	Industrial Toxicology	Fine
44	Computer Monitor	TVM	1	Information	Not in use, not capable for newer computer version.
<b>1999</b>					
45	Mix Rotor	Stuart Science	1	Industrial Toxicology	Fine
46	Printer	EPSON	1	JICA	Out of order
47	X-Ray Film Viewer	Hope Thai Medc	1	Industrial Medicine	Fine
48	Office 2000	Microsoft	1	JICA	Fine but out of date
49	Windows 98	Microsoft	1	JICA	Fine but out of date
50	UPS	Leonics	1	Industrial Toxicology	Fine
51	Upgrade SPSS	SPSS	1	Information	Fine
52	UPS	Leonics	1	JICA	Out of order
53	Sliding Door Cabinet	Leeco	2	JICA	Fine
54	Book Shelf		1	JICA	Fine
55	Table	KINGDOM	2	JICA	Fine
56	Locker	Leeco	1	JICA	Fine
57	Door Cabinet	Leeco	1	JICA	Fine
58	Desk for Desktop Computer Set		1	JICA	Fine
59	Book Shelf		1	JICA	Fine
60	Chair	KINGDOM	6	JICA	Fine

<b>2000</b>					
61	Dust Regenerator	SHIBATA	1	Industrial Toxicology	Fine
62	Adapter for Dust Regenerator	SHIBATA	1	Industrial Toxicology	Fine
63	CD ROM	Hewlett Packard	1	JICA	Out of order
64	Camera	Canon	1	JICA	Fine
65	Lens	Canon	1	JICA	Fine
66	Midget Impinger for Dust Regenerator	SHIBATA	1	Industrial Toxicology	Fine
<b>2001</b>					
67	Disk Drive	Iomega	1	Ergonomics	Fine

**Source:** Checked by Responsible Personnel at NICE, December, 2005.

## ANNEX 2

### List of Guideline and Manual issued by NICE, during JICA-NICE and after Project Completion

#### Guideline and manual, issued by JICA budget

<b>1998</b>	<b>Title</b>	<b>Section</b>	<b>Copies</b>
1)	Guideline for Construction Safety Management	Construction Safety	1,500
2)	Guideline for Safety on Construction Machinery and Equipment	Machinery Safety	2,380
3)	Guideline for Prevention of Major Industrial Accident	Chemical Safety	2,000
4)	Manual of Training for Trainers	OSH Training	3,000
5)	Guideline for Sustainable Development of OSH Management	Administration	2,550
6)	Work Improvement in Small Enterprises (WISE)	Ergonomics	2,000
7)	Productivity and Work Improvement in Rice Mills	Ergonomics	1,000
<b>1999</b>			
8)	Manual of Construction Safety for Supervisors	Construction Safety	2,000
9)	Manual for Safety on Explosion	Chemical Safety	1,700
10)	Manual for Working Environment Assessment (Physical Agent)	Industrial Hygiene	1,000
11)	Manual of Occupational Disease Prevention for Safety Officers	Industrial Medicine	2,500
12)	Basic Survey on Health Management in Thailand	Industrial Medicine	1,000
13)	Prevention of Occupational Overuse Syndrome in Manufacturing	Ergonomics	2,000
14)	Manual Handling in Retail Industry	Ergonomics	1,000
<b>2000</b>			
15)	Guideline for Construction Safety of Temporary Structure	Construction Safety	1,500
16)	Guideline for Crane Safety	Machinery Safety	2,000
17)	Manual for Working Environment Assessment II (Dust & Chemical)	Industrial Hygiene	1,500
18)	How to Prevent Lumbago	Ergonomics	1,000
19)	Ergonomics	Ergonomics	1,000
20)	Manual for Training of Safety Inspector	Inspection	1,000
21)	Manual for Training of Safety Officer at Supervisor Level	Inspection	1,000
22)	Guideline for Safety Management Plan in Construction	Construction Safety	1,000
23)	Guideline for Safety Management System in Construction	Construction Safety	1,500
24)	Guideline for Safety and Machinery	Machinery Safety	2,000
25)	Guideline for Safety on Electricity	Safety Engineering	1,000
26)	Ventilation for Contaminant Control	Industrial Hygiene	1,500
27)	Biohazard and Occupational Infectious Disease	Industrial Toxicology	1,000
28)	Guideline for Occupational Health Control System	Industrial Medicine	1,000
29)	Ergonomics Problems for Work Improvement	Ergonomics	1,500(300)
30)	Guideline on Inspection of Major Hazard Industries	Chemical Safety	1,000

<b>1998</b>	<b>Title</b>	<b>Section</b>	<b>Copies</b>
31)	Guideline for Organizing Safety and Health Training in Enterprise	OSH Training	1,500
32)	Basic Manual on Boiler for Safety Inspector	Inspection	1,000
33)	Work Improvement in Small Enterprises (Reprinting)	Ergonomics	1,000
34)	Guideline for Safety Management Plan in Construction (Reprinting)	Construction Safety	1,000
35)	Manual of Occupational Disease Prevention for Safety Officers	Industrial Medicine	1,000
36)	Manual for Working Environment Assessment	Industrial Hygiene	1,000

### **Guideline and Manual, issued by NICE budget**

<b>1999</b>	<b>Title</b>	<b>Section</b>	<b>Copies</b>
1)	Method of Analysis of Lead in Blood	Industrial Toxicology	For own use
2)	Method of Analysis of Delta Aminolevulinic Acid in Urine	Industrial Toxicology	For own use
3)	Method of Analysis of Hippuric Acid and Creatinine in Urine	Industrial Toxicology	For own use
4)	Manual for the Analysis in Laboratory	Industrial Toxicology	For own use
5)	Manual of Operation of HPLC and Analysis of Hippuric Acid and Creatinine in Urine	Industrial Toxicology	For own use
<b>2000</b>			
6)	Quality Control for Measurement and Analysis in Laboratory	Industrial Toxicology	For own use
<b>2001</b>			
7)	Survey of Chemical Safety Management in Industry	Chemical Safety	1,000
8)	Manual for Radiation Health and Safety at Work	Industrial Hygiene	1,000
9)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Manufacture of Metal Product and Metal Pump	Inspection and Industrial Hygiene	1,000
10)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Footwear	Inspection and Industrial Hygiene	1,000
11)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Spinning and Weaving	Inspection and Industrial Hygiene	1,000
12)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Manufacture of Wearing Apparel from Cloths	Inspection and Industrial Hygiene	1,000
13)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Planning and Driving Wooden Materials, Veneer	Inspection and Industrial Hygiene	1,000
14)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Manufacture of Rubber, Rubber Product	Inspection and Industrial Hygiene	1,000
15)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Passenger and Freight Land Transport	Inspection and Industrial Hygiene	1,000
16)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Restaurant, Hotel, Department Store	Inspection and Industrial Hygiene	1,000
17)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Construction	Inspection and Industrial Hygiene	1,000

18)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Food and Beverage	Inspection and Industrial Hygiene	1,000
	<b>Title</b>	<b>Section</b>	<b>Copies</b>
19)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Founding	Inspection and Industrial Hygiene	1,000
20)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Paper Product	Inspection and Industrial Hygiene	1,000
21)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Tanneries and Product of Leather	Inspection and Industrial Hygiene	1,000
22)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Furniture and Household Utensils	Inspection and Industrial Hygiene	1,000
23)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Manufacture of Plastic Products	Inspection and Industrial Hygiene	1,000
24)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Assembly of Electrical Parts	Inspection and Industrial Hygiene	1,000
25)	The Safe Use of Asbestos	Industrial Medicine	3,000
26)	Aerobic Dace of Health	Industrial Medicine	3,000
27)	Manual of Operation for GC, H.P.Autosystem XLGC	Industrial Toxicology	For own use
28)	Manual of Operation for XRD and Analysis of Silica in Air	Industrial Toxicology	For own use

**Publications (manual, guideline and research report), issued by NICE after JICA-NICE Project Completion**

<b>2002</b>	<b>Title</b>	<b>Section</b>	<b>Copies</b>
1)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Firework	Chemical Safety	1,000
2)	A Survey Report on Hearing Impairment in Beverage Manufacture	Industrial Medicine	200
3)	A Study Report on Health Status of Women Labor under Occupational Diseases Control Project	Industrial Medicine	200
4)	Q&A on Loud Noise and Hearing Loss from Working Environment	Industrial Medicine	300
5)	Manual of Health Protection for Women Labour	Industrial Medicine	300
<b>2003</b>			
6)	Guideline for OSH Inspections and Accident Prevention in 16 High Risk Industries, Manufacture of Plastic Products	Industrial Hygiene	1,000
7)	Guideline for OSH Inspections and Accident Prevention for Working in Connection with Ammonia	Chemical Safety	1,000
<b>2004</b>			
8)	Code of Practices for Selection, Utilization and Maintenance of Respiratory Protective Devices	DLPW	1,500
9)	Industrial Noise Pollution Management	DLPW	1,500
10)	Manual for Code of Practices related to the Ministerial Regulations and Notifications in connection with SH; the Control Rate of Weight Permitted for Employees to Carry	DLPW	1,000

11)	Study Report on OSH Situation and Working Environment	Industrial Hygiene	1,000
12)	Administrative Guide for Health Examination Services	Industrial Medicine	1,000
13)	Manual for Zero-Accident Campaign Project	Safety Promotion	1,000

<b>2005</b>	<b>Title</b>	<b>Section</b>	<b>Copies</b>
14)	Manual for Code of Practices for OSH Protection and Working Environment of Home Workers	Industrial Toxicology	1,000
15)	Report on Best Practices of Working Condition and Environment Improvement Project	Ergonomics	1,000
16)	Report on the Project to Study and Analyse the Result of the Establishment of Safety Measures for Oil Depot	Chemical Safety	50
17)	Report on the Project to Study and Analyse the Result of the Establishment of Safety Measure for Chemical Hazard	Chemical Safety	50
18)	Manual for Investigation and Analysis the Safety Measures of Oil Depot	Chemical Safety	1,000
19)	Application Forms for Zero Accident Campaign Project	Safety Promotion	10,000
20)	Manual for Training on Safety Promotion in Schools and Educational Institutes	Safety Investigation System Development	
21)	Manual of Work Improvement for Safe Home	DLPW	1,000
22)	CD-ROM: Health Examination for Workers	Industrial Medicine	2,100

### Manuals published by ILO after JICA-NICE Project Completion

<b>2003</b>	<b>Title</b>	<b>Section</b>	<b>Copies</b>
1)	Work Improvement for Safe Home (WISH)	Ergonomics	1,000
2)	Work Improvement in Small Enterprises	Ergonomics	1,000

### Publications published by 3M Thailand Company Ltd. after JICA-NICE Project Completion

<b>2004</b>	<b>Title</b>	<b>Section</b>	<b>Copies</b>
1)	Selection, Utilization and Maintenance of Equipment for Respiratory System Protection	Industrial Hygiene	1,500
2)	Management of Industrial Noise Pollution	Industrial Hygiene	3,500
3)	Administrative Guide to Hearing Conservation	Industrial Hygiene	10,000
4)	Administrative Respiratory Protective Program	Industrial Hygiene	10,000

### ANNEX 3

#### Evaluation Grid for Ex-post Evaluation Study on The Project on Strengthening of the National Institute for the Improvement of Working Conditions and Environment (NICE Project)

					<b>Impact</b>
<b>Evaluation Questions</b>		<b>Measures</b>	<b>Data Needed</b>	<b>Data Sources</b>	<b>Data Collection Methods</b>
<b>Main Questions</b>	<b>Sub Questions</b>				
1. How far has the goal to protect workers from industrial accidents and occupational diseases achieved since the terminal evaluation?	1.1 What was the important achievement at project termination? 1.2 How far has the current number of occupational accidents and diseases decreased since project completion? 1.3 Has the present achievement reached the planned target set by the Ministry of Labor and Social Welfare? 1.4 Which industrial sectors can achieve the set target most and why? 1.5 Which industrial sectors can not achieve the set	<ul style="list-style-type: none"> <li>- Current number of occupational accidents and diseases compare with the past 8 years records</li> <li>- Current number of accidents and diseases should be decreased to less than 26 per 1000 workers/year.</li> <li>- Discussion result on groups of industries that can/ can not achieve the target and reasons</li> </ul>	<ul style="list-style-type: none"> <li>- Statistics of accidents and diseases since 1997-2005</li> <li>- Views and analysis of responsible personnel</li> </ul>	<ul style="list-style-type: none"> <li>- Project documents</li> <li>- Annual reports of Social Security Office</li> <li>- Annual Report of NICE</li> <li>- Inspection Division Chief (present and former)</li> <li>- Chiefs of Division of Industry, MOI and Division of Occupational Health, MOH</li> </ul>	<ul style="list-style-type: none"> <li>- Semi-structured Interviews</li> <li>- Document /literature search</li> </ul>



					<b>Impact</b>
<b>Evaluation Questions</b>		<b>Measures</b>	<b>Data Needed</b>	<b>Data Sources</b>	<b>Data Collection Methods</b>
<b>Main Questions</b>	<b>Sub Questions</b>				
	target and why?				
2. What is the present movement of NICE and related agencies to strengthen occupational safety and health (OSH)?	2.1 How are the industrial safety training courses, both basic and advance, for OSH inspector and for persons in charge of safety and health management being managed? 2.2 Are there any newly developed curricula and textbooks after project termination and who are the target groups? 2.3 How many OSH personnel of private enterprises were trained? 2.4 How was the information on OSH provided by NICE and related agencies? Is it an easy to access system? 2.5 How does the cooperation between	<ul style="list-style-type: none"> <li>- Number of basic and advance training courses and workshops organized</li> <li>- Number of trainees / participants</li> <li>- Number of topics of information in NICE homepage by 2005</li> <li>- Expansion of cooperation between NICE and other agencies</li> <li>- Safety management system and maintenance activities are implemented by private enterprises</li> <li>- Regular inspections are made and recommendations for improvement of safety procedures are provided</li> </ul>	<ul style="list-style-type: none"> <li>- Reports on industrial safety training courses, seminar and workshop programs</li> <li>- Guideline /manuals, models, audio visuals and checklists for safety management and maintenance activities</li> <li>- Investigation reports prepared by client industries</li> </ul>	<ul style="list-style-type: none"> <li>- Counterpart who developed the safety plan in construction safety system in Thailand</li> <li>- Personnel in charge of OSH at MOI and MOH</li> <li>- Chiefs of concerned sections esp. the staffs who have been on counterpart training program in Japan</li> <li>- representative of private sectors to be visited</li> </ul>	<ul style="list-style-type: none"> <li>- Interviews</li> <li>- Document study</li> <li>- Site visits</li> </ul>

					<b>Impact</b>
<b>Evaluation Questions</b>		<b>Measures</b>	<b>Data Needed</b>	<b>Data Sources</b>	<b>Data Collection Methods</b>
<b>Main Questions</b>	<b>Sub Questions</b>				
	<p>NICE and MOH for joint activities effect the protection of workers from accidents and diseases?</p> <p>2.6 How does the cooperation between NICE and MOI (and with other agencies) effect the inspection and promotion of industrial safety?</p>				
3. How is the progress of reviewing and/or upgrading occupational safety and health (OSH) legislation/act ?	<p>3.1 How far is the progress of the issuing of Ministerial Regulations and Notifications in connection with SH under the Act (Section 1 of Article 103)?</p> <p>3.2 Who are responsible for the review of OSH legislation /act and how far is the progress?</p> <p>3.3 What are the factors affected the progress?</p>	<ul style="list-style-type: none"> <li>- Issuing and enforcement of regulations and notifications related to occupational safety</li> <li>- Roles of Tripartite Committee on OSHE</li> <li>- Discussion result on progress and related factors</li> </ul>	<ul style="list-style-type: none"> <li>- Factory Act, 1992</li> <li>- Labour Protection Act, 1998</li> <li>- Related regulations and notifications</li> <li>- Report of NICE on OSH legislation/act</li> </ul>	<ul style="list-style-type: none"> <li>- Members of Tripartite Committee on OSHE</li> <li>- Director of NICE and Section Chiefs</li> </ul>	<ul style="list-style-type: none"> <li>- Interviews</li> <li>- Document study</li> </ul>
4. Are there	4.1 What are the obstacles	- Result of discussions with	-Interview summary	- Director of	- Document

					<b>Impact</b>
<b>Evaluation Questions</b>		<b>Measures</b>	<b>Data Needed</b>	<b>Data Sources</b>	<b>Data Collection Methods</b>
<b>Main Questions</b>	<b>Sub Questions</b>				
unintended positive and negative effects as a result of the operation of NICE Project?	of the work? 4.2 What are unintended positive and negative effects of the Project? 4.3 What are the unintended gains/good points of the Project? Who benefited most? 4.4 What should be done to solve the problems or to prevent further expansion of negative effects?	responsible personnel at NICE and related agencies		NICE and Section Chiefs - Coordinator of MOI and MOH - Representatives of private sectors to be visited	study - Individual in-depth interviews and group interview - Site visits
5. What factors contributed to positive and negative impacts?	5.1 What are the positive /negative impacts of the Project? 5.2 Are there any changes in the government policy that contributing to positive/negative impacts? 5.3 What events after the Project termination did influence project goals / directions?	- Result of discussions with responsible personnel at NICE and related agencies	-Government policy -Network / collaborations with related agencies -Interview summary	- Director of NICE and Section Chiefs - Coordinator of MOI and MOH - Representatives of private sectors to be visited	- Document study - Individual in-depth interviews and group interview - Site visits

<b>Sustainability</b>					
<b>Evaluation Questions</b>		<b>Measures</b>	<b>Data Needed</b>	<b>Data Sources</b>	<b>Data Collection Methods</b>
<b>Main Questions</b>	<b>Sub Questions</b>				
1. How has NICE been maintaining the project activities and services provided by the Project?	1.1 How are the equipments purchased by the Project been maintained and utilized? 1.2 Are there necessary equipments been purchased after the project end? 1.3 Are there additional guideline/manuals that have been produced and reproduced? 1.4 Do training, seminar and workshops being organized meet with the demands of private enterprises? (esp. the main 6 fields of industrial safety and small scale enterprises)	<ul style="list-style-type: none"> <li>- Number of necessary equipments purchased i.e. updated software and replacement of hardware etc.</li> <li>- Number of publications and recorded materials on OSH have been produced and distributed to target groups</li> <li>- Enough budget has been provided</li> <li>- Regular maintenance system is in place for the equipments, workshop and project building</li> <li>- Improvements/modifications and number of training and workshops organized in response to the needs of target groups</li> <li>- Number of participants from different target groups benefiting from training, seminar and workshops</li> </ul>	<ul style="list-style-type: none"> <li>- List of equipments</li> <li>- Report on maintenance activities</li> <li>- Reports on training activities and seminar/workshops organized</li> <li>- Report on laboratory works</li> <li>- List of publications printed and distributed before and after the terminal evaluation</li> </ul>	<ul style="list-style-type: none"> <li>- Chiefs of Training section and Lab</li> <li>- Librarian</li> <li>- Consulting Firms contracted for organizing training activities on industrial safety (basic and advance courses)</li> </ul>	<ul style="list-style-type: none"> <li>- Interviews</li> <li>- Target group site visits and observation</li> <li>- RICE in NE</li> <li>- Document search</li> </ul>

<b>Sustainability</b>					
<b>Evaluation Questions</b>		<b>Measures</b>	<b>Data Needed</b>	<b>Data Sources</b>	<b>Data Collection Methods</b>
<b>Main Questions</b>	<b>Sub Questions</b>				
2. What factors are contributing to or inhibiting the Project effects or sustainability?	2.1 Are there any policy and measures enabling continuous staff development ie. technical exchange and capability training on specific area? 2.2 Are there any changes in the government policy? 2.3 Does NICE receive increase budget allocation for the planned activities? 2.4 What are the trend changes towards SOH education and an establishment of preventive measures that may affect project sustainability?	<ul style="list-style-type: none"> <li>- Clear plan and enough budget provided for staff development</li> <li>- Number of staffs undergone capability building activities after the project termination</li> <li>- Discussion result</li> </ul>	<ul style="list-style-type: none"> <li>- Annual Report of NICE and</li> <li>- Report of the Department of Labor and Welfare</li> <li>- Interview summary</li> </ul>	<ul style="list-style-type: none"> <li>-NICE</li> <li>-RICE</li> </ul>	<ul style="list-style-type: none"> <li>-Interviews</li> <li>-Document study</li> </ul>
3. How the transformation into an	3.1 Are there any changes in regards to organization	- Discussion result	-Interview summary	-NICE -RICE	-Interview -Document study

<b>Sustainability</b>					
<b>Evaluation Questions</b>		<b>Measures</b>	<b>Data Needed</b>	<b>Data Sources</b>	<b>Data Collection Methods</b>
<b>Main Questions</b>	<b>Sub Questions</b>				
independent administrative institution affected the role of the Center?	charts and division of roles and responsibility of the Ministry and DLPW? 3.2 Are there any negative or positive changes as a result of the transformation?				-Questionnaire
4. Do the manuals/guidelines or the training initiated by the Project be practical in the regional level or private enterprises?	4.1 Do the private enterprises establish safety management systems and follow the guidelines? 4.2 Are there any mechanism of data collection on necessary topic and use the information gained in modification of training session design including the development of manuals	<ul style="list-style-type: none"> <li>- OSH committees are established and responsible personnel are assigned by target private enterprises</li> <li>- Level of satisfaction of clientele on practicality of manuals /guideline as well as training programs provided</li> <li>- Mechanism at NICE for data collection on necessary topics including feedbacks on manuals /guideline and the training program initiated by the Project</li> </ul>	<ul style="list-style-type: none"> <li>- Samples of guidelines /manuals as well as text books being used at target enterprises</li> <li>- Interview summary</li> </ul>	<ul style="list-style-type: none"> <li>- NICE</li> <li>- RICE</li> <li>- Private enterprises</li> <li>- Trainees</li> <li>- Workers of private enterprises to visit</li> </ul>	<ul style="list-style-type: none"> <li>- Interview</li> <li>- Site visit</li> <li>- Document study</li> <li>- Questionnaire</li> </ul>

Sustainability					
Evaluation Questions		Measures	Data Needed	Data Sources	Data Collection Methods
Main Questions	Sub Questions				
	/guidelines? 4.3 Has any research finding been used in developing or modifying the manuals/ guidelines or the training provided by NICE? 4.4 Are there increase demands of private enterprises in OSH services?	- Discussion result			

## ANNEX 4

### Interview form for the study on impacts and sustainability of JICA-NICE NICE-02: Questionnaire for counterparts

**Explanation :**

1. This questionnaire is prepared to evaluate the post-project impacts and sustainability of JICA-supported NICE. Your ideas and recommendations will be very beneficial for the improvement of related parties' operation and for JICA's consideration for further support to similar projects.

**Please be advised that this evaluation does not aim at evaluating you who are providing information, rather evaluating the project. Therefore, may you freely express your opinions and provide your recommendations to both JICA and NICE.**

2. The following questionnaire consists of questions of which answers are provided for you to choose and questions about which respondents need to write down their views, reasons and recommendations. Please read the questions and then encircle answers of your choice or clearly write down to explain your reasons.

3. Having completed your answers, please send them to Sinee Chuangcham, Research and Development Institute (RDI), Khon Kaen University, Khon Kaen, 40002, or through Fax. No. 0-4336-2043 by 8 November 2005. In case you have a question or doubt, please ask Sinee Chuangcham at Tel. No. 0-1873-6540.

Please specify your name & surname, position and organization/section you belong to:

Name & Surname	Position	Organization/section you belong to	Telephone No.

1. Is your current responsibility related to occupational safety?

- 1. Yes
- 2. No (Please specify reasons)

2. Did you gain knowledge from working with JICA-NICE Project?

- 1. Yes.            a. little            b. moderate            c. much
- 2. No.    (Please specify reasons)



3. After JICA-NICE Project ended, with regard to occupational safety, has your knowledge been ever developed?

1. Yes. a. once a year b. more than once a year

2. No. Please specify reasons

4. Did you take part in the preparation of the manuals and guidelines on occupational safety? (Multiple choice)

1. During the JICA-NICE Project operation (June 1997 – May 2002)

1.1 Yes. a. 1-5 handbooks b. more than 6 handbooks. Please specify list of handbooks.

1.2 No. Please specify reasons.

2. Post JICA-NICE Project :

2.1 Yes. a. 1-5 handbooks b. more than 6 handbooks Please specify list of handbooks.

2.2 No. Please specify reasons.

5. How is the manual and guideline on occupational safety that was prepared by NICE practical or suitable with current working condition?

a. much b. moderate c. little. Specify reasons

6. Have you taken part in any designing of curriculum or served as a resource person on safety? (multiple choice)

1. During JICA-NICE operation:

1.1 Yes. Please specify the curriculum/s.

1.2 No. Please specify reasons.

2. Post JICA-NICE Project:

2.1 Yes. Please specify the curriculum/s.

2.2 No. Please specify reasons.

7. How is NICE’s training curriculum relevant to current problem/need of entrepreneurs/establishments?

- a. much      b. moderate      c. little. Please specify reasons.

8. Based on your own evaluation, please rank the success, to date, on safety development. (1 = minimum; 9 = maximum).

\_\_\_ Chemical Safety and Major Hazard Control Branch

\_\_\_ Industrial Hygiene Branch

\_\_\_ Industrial Toxicology Branch

\_\_\_ Ergonomics Branch

\_\_\_ Industrial Safety Branch

\_\_\_ Construction Safety Branch

\_\_\_ Occupational Medicine Branch

\_\_\_ Industrial Machine Branch

\_\_\_ Electrical Safety Branch

9. How much, by following aspects, is JICA-NICE’s overall goal of “workers are protected from industrial accidents and occupational diseases” achieved?

1. National policy: a. much      b. moderate      c. little. Please specify reasons.

2. Organization and administration & management:

a. much      b. moderate      c. little. Please specify reasons.

3. Budget & income : a. much      b. moderate      c. little. Please specify reasons.

4. Knowledge/technical aspect: a. much      b. moderate      c. little. Please specify reasons.

5. Socio-cultural: a. much      b. moderate      c. little. Please specify reasons.

10. Please rank the importance of factors for success and sustainability of the operation on occupational safety (1 = minimum; 6 = maximum)

<u>Factors</u>	<u>Favorable</u>	<u>Obstructive</u>
- National policy	_____	_____
- NICE’s policy and	_____	_____

- administration & management
- Budget and income \_\_\_\_\_
  - Knowledge and technical aspect \_\_\_\_\_
  - Socio-culture \_\_\_\_\_
  - Other (s). Please specify. \_\_\_\_\_

11. Please specify level of success, by types of industry/establishment, on coordination, for safety system development, between NICE and entrepreneurs (1 = little; 2 = moderate; 3 = much): Comparison between JICA-NICE implementing period (1997-2002) and post JICA-NICE period:

<u>Type of industry/establishment</u>	<u>JICA-NICE implementing period</u>	<u>Post JICA-NICE period</u>
- Mining survey and operation	_____	_____
- Food & beverages production	_____	_____
- Garments and ornaments	_____	_____
- Forestry, wood-products	_____	_____
- Paper products, printing	_____	_____
- Chemical products, petroleum	_____	_____
- Products from non-metal minerals.	_____	_____
- Primary metal production	_____	_____
- Metal products	_____	_____
- Vehicle production and assembling	_____	_____
- Other production industries	_____	_____

- Public utilities \_\_\_\_\_
- Construction \_\_\_\_\_
- Transportation, communications \_\_\_\_\_
- Trading \_\_\_\_\_
- Others \_\_\_\_\_

12. How is present coordination for promotion, inspection, development and vigilance on safety between NICE and the 12 RICEs?

- a. There are some limitations. However, they are of bearable and non-problematic level.
- b. There are limitations that should be improved and solved. Please specify important problems that should be solved and areas that need attention:

13. Did operation of JICA-NICE cause any unexpected impacts?

Negative impacts:

- 1. No.
- 2. Yes. Please specify.

Positive impacts:

- 1. No.
- 2. Yes. Please specify.

14. How would adjustment of administrative system, for NICE to become an autonomous private organization, affect the efficiency of the operation?

- a. very good result. Please specify reasons.
- b. moderate result. Please specify reasons.
- c. poor result. Please specify reasons.
- d. unclear. Please specify reasons.

15. For NICE to be able to operate more efficiently and effectively, what are the aspects of operation that need to be acceleratively developed or improved?
  
16. What are your views with regard to important lesson learnt that you got from JICA-NICE Project and your recommendations on how to improve cooperation with JICA in the next period both in Thailand and other countries?

## ANNEX 5

### Interview form for the study on impacts and sustainability of JICA-NICE

**NICE-01 :** Questionnaire for counterparts who passed the training in Japan (1997-2001)

**Explanation :**

1. This questionnaire is prepared to evaluate the post-project impacts and sustainability of JICA-supported NICE. Your ideas and recommendations will be very beneficial for the improvement of related parties' operation and for JICA's consideration for further support to similar projects.

Please be advised that this evaluation does not aim at evaluating you who are providing information, rather evaluating the project. Therefore, may you freely express your opinions and provide your recommendations to both JICA and NICE.

2. The following questionnaire consists of questions of which answers are provided for you to choose and questions about which respondents need to write down their views, reasons and recommendations. Please read the questions and then encircle answers of your choice or clearly write down to explain your reasons.

3. Having completed your answers, please send them to Sinee Chuangcham, Research and Development Institute (RDI), Khon Kaen University, Khon Kaen, 40002, or through Fax. No. 0-4336-2043 by 8 November 2005. In case you have a question or doubt, please ask Sinee Chuangcham at Tel. No. 0-1873-6540.

Please specify your name & surname, position and organization/section you belong to:

Name & Surname	Position	Organization/section you belong to	Telephone No.

1. Having undergone training in Japan, for your regular duty operation, have you applied the knowledge?

1. Yes.            a. little            b. moderate            c. much

2. No. (Please specify reasons)

2. After JICA-NICE Project ended, with regard to occupational safety, has your knowledge been ever developed?
  1. Yes. a. once a year      b. more than once a year
  2. No. Please specify reasons
3. Did you take part in the preparation of the manuals and guidelines on occupational safety? (Multiple choice)
  - (1) During the JICA-NICE Project operation (June 1997 – May 2002)
    - 1.1 Yes. a. 1-5 handbooks   b. more than 6 handbooks. Please specify list of handbooks.
    - 1.2 No. Please specify reasons.
  - (2) Post JICA-NICE Project:
    - 2.1 Yes. a. 1-5 handbooks   b. more than 6 handbooks Please specify list of handbooks.
    - 2.2 No. Please specify reasons.
4. How is the manual and guideline on occupational safety that was prepared by NICE practical or suitable with current working condition?
  - a. much      b. moderate      c. little. Specify reasons
5. Have you taken part in any designing of curriculum or served as a resource person on safety? (multiple choice)
  1. During JICA-NICE operation:
    - 1.1 Yes. Please specify the curriculum/s.
    - 1.2 No. Please specify reasons.
  2. Post JICA-NICE Project:
    - 2.1 Yes. Please specify the curriculum/s.
    - 2.2 No. Please specify reasons.

6. How is NICE's training curriculum relevant to current problem/need of entrepreneurs/establishments?

a. much    b. moderate    c. little. Please specify reasons.

7. Based on your own evaluation, please rank the success, to date, on safety development. (1 = minimum; 9 = maximum).

\_\_\_ Chemical Safety and Major Hazard Control Branch

\_\_\_ Industrial Hygiene Branch

\_\_\_ Industrial Toxicology Branch

\_\_\_ Ergonomics Branch

\_\_\_ Industrial Safety Branch

\_\_\_ Construction Safety Branch

\_\_\_ Occupational Medicine Branch

\_\_\_ Industrial Machine Branch

\_\_\_ Electrical Safety Branch

8. How much, by following aspects, is JICA-NICE's overall goal of "workers are protected from industrial accidents and occupational diseases" achieved?

1. National policy: a. much            b. moderate    c. little. Please specify reasons.

2. Organization and administration & management: a. much b. moderate  
c. little. Please specify reasons.

3. Budget & income: a. much    b. moderate            c. little. Please specify reasons.

4. Knowledge/technical aspect: a. much    b. moderate    c. little. Please specify reasons.

5. Socio-cultural:    a. much            b. moderate    c. little. Please specify reasons.

9. Please rank the importance of factors for success and sustainability of the operation on occupational safety (1 = minimum; 6 = maximum)



<u>Factors</u>	<u>Favorable</u>	<u>Obstructive</u>
- National policy	_____	_____
- NICE's policy and administration & management	_____	_____
- Budget and income	_____	_____
- Knowledge and technical aspect	_____	_____
- Socio-culture	_____	_____
- Other (s). Please specify.	_____	_____

10. Please specify level of success, by types of industry/establishment, on coordination, for safety system development, between NICE and entrepreneurs (1 = little; 2 = moderate; 3 = much): Comparison between JICA-NICE implementing period (1997-2002) and post JICA-NICE period:

<u>Type of industry/establishment</u>	<u>JICA-NICE implementing period</u>	<u>Post JICA-NICE period</u>
- Mining survey and operation	_____	_____
- Food & beverages production	_____	_____
- Garments and ornaments	_____	_____
- Forestry, wood-products	_____	_____
- Paper products, printing	_____	_____
- Chemical products, petroleum	_____	_____
- Products from non-metal minerals.	_____	_____

- Primary metal production \_\_\_\_\_
- Metal products \_\_\_\_\_
- Vehicle production and assembling \_\_\_\_\_
- Other production industries \_\_\_\_\_
- Public utilities \_\_\_\_\_
- Construction \_\_\_\_\_
- Transportation, communications \_\_\_\_\_
- Trading \_\_\_\_\_
- Others \_\_\_\_\_

11. How is present coordination for promotion, inspection, development and vigilance on safety between NICE and the 12 RICEs?

- a. There are some limitations. However, they are of bearable and non-problematic level.
- b. There are limitations that should be improved and solved. Please specify important problems that should be solved and areas that need attention:

12. Did operation of JICA-NICE cause any unexpected impacts?

Negative impacts:

- 1. No.
- 2. Yes. Please specify.

Positive impacts:

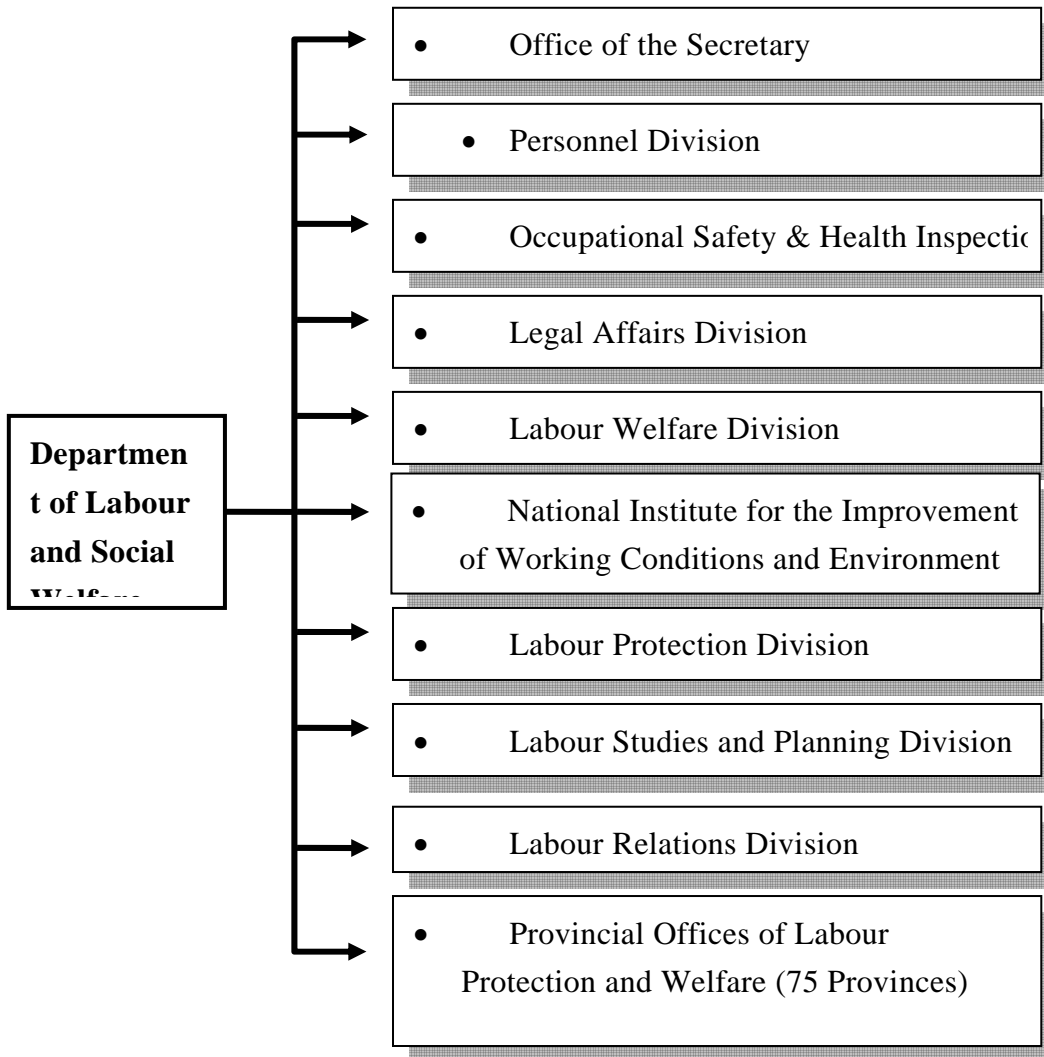
- 1. No.
- 2. Yes. Please specify.

13. How would adjustment of administrative system, for NICE to become an autonomous private organization, affect the efficiency of the operation?
  - a. very good result. Please specify reasons.
  - b. moderate result. Please specify reasons.
  - c. poor result. Please specify reasons.
  - d. unclear. Please specify reasons.
14. For NICE to be able to operate more efficiently and effectively, what are the aspects of operation that need to be acceleratively developed or improved?
15. What are your views with regard to important lesson learnt that you got from JICA-NICE Project and your recommendations on how to improve cooperation with JICA in the next period both in Thailand and other countries?

## ANNEX 6

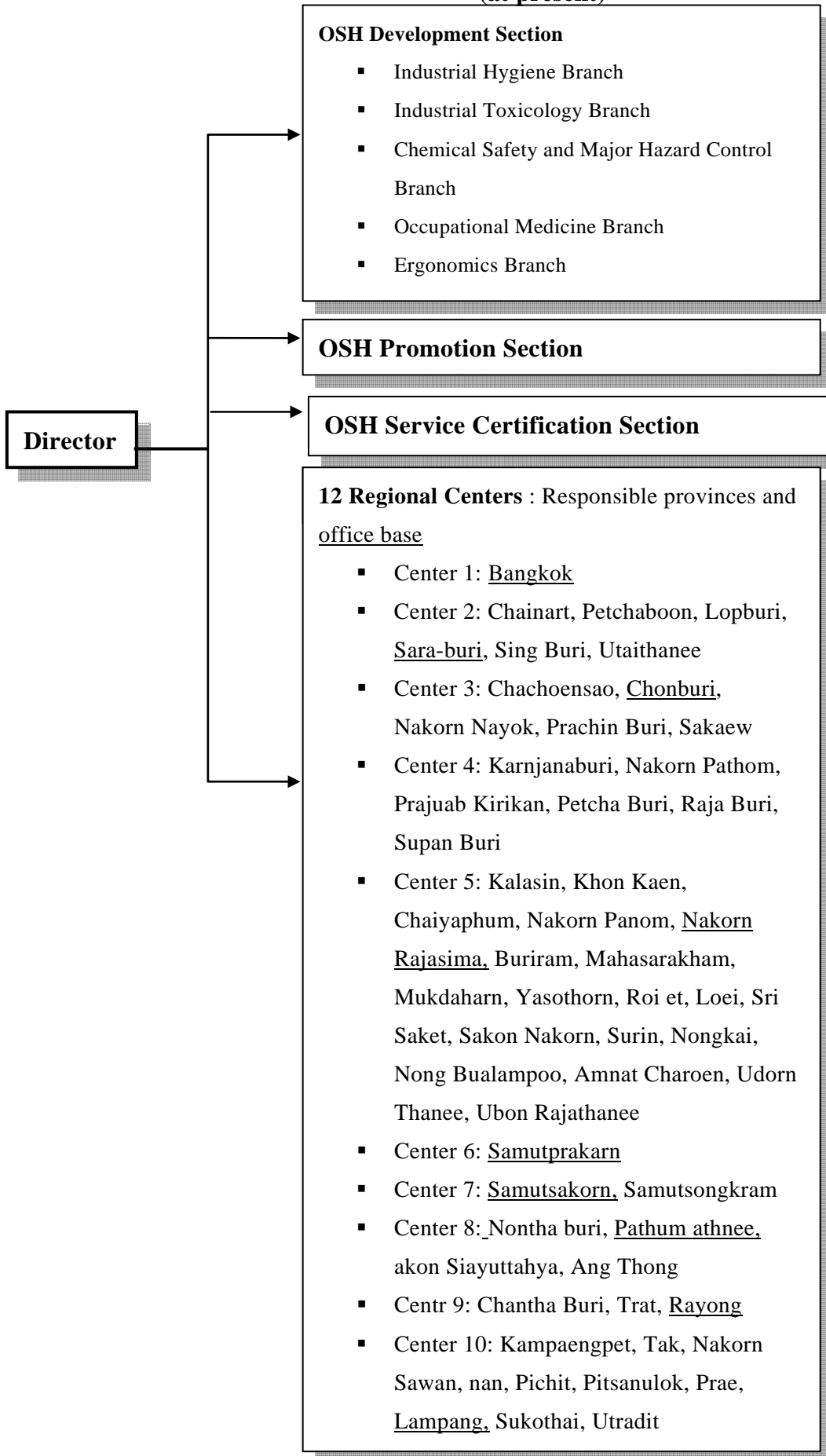
### Organizational Structure of NICE

#### Organization Chart of the Department of Labour Protection and Welfare (DLPW)

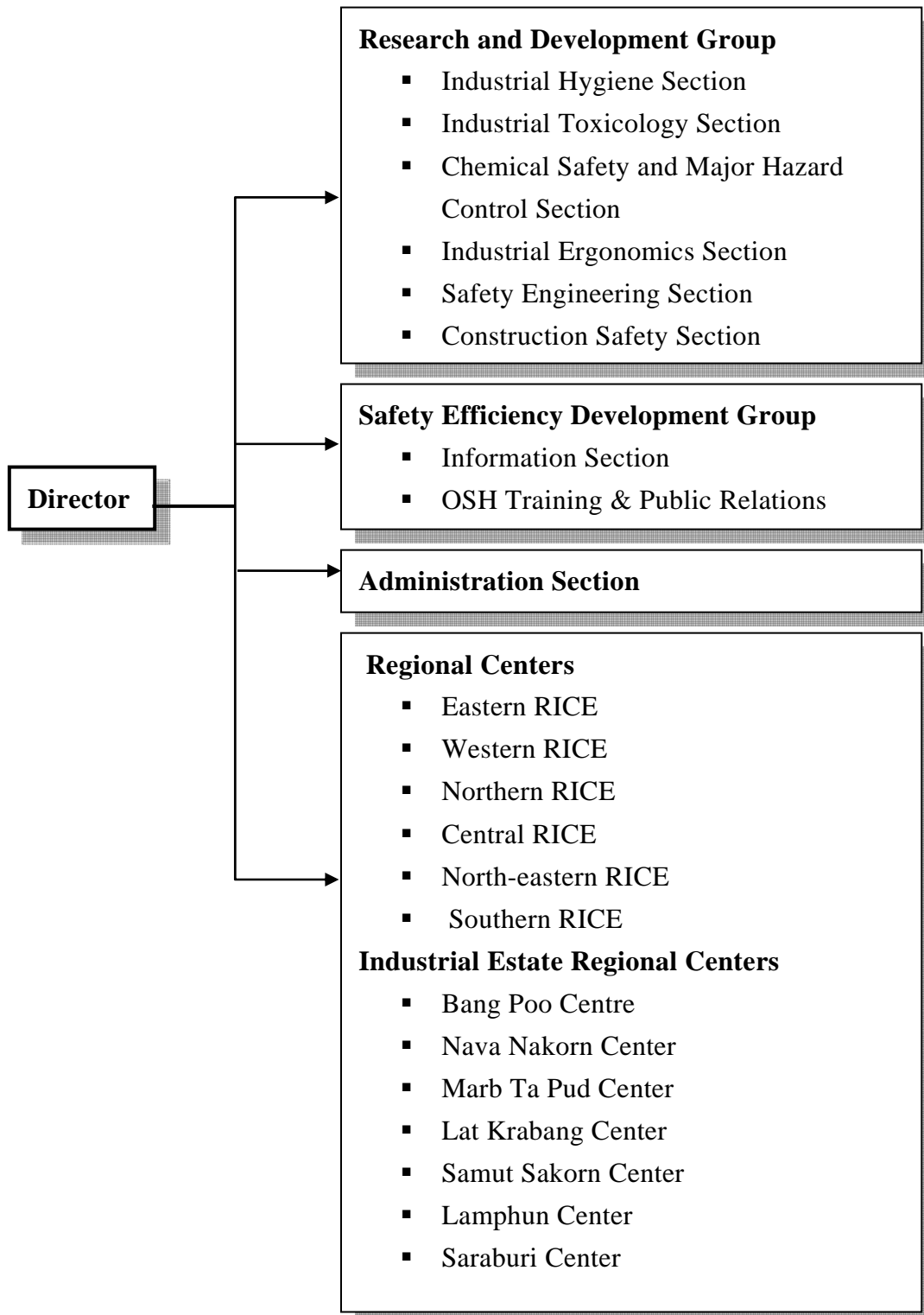


**Organization Chart of NICE**

**(at present)**



## Organization Chart of NICE during JICA-NICE



## ANNEX 7

### Name List of Key Informants

Date/month/	Names / activity	Organization/work place
<b><u>28 Oct. 2005</u></b>	Ms.Pornsawan chanyoot	- Director of RICE 5
	Mr.Sitta Thammanoonrak	- Technical Labour Officer
<b><u>31 Oct. 2005</u></b>		
09.00 – 14.00	- Document review	- NICE
15.30 – 16.30	- Ms.Rakawin Lethanawanitchapun	- ILO
<b><u>1 Nov. 2005</u></b>	- Director and Section Heads	- NICE
	- Distribution of questionnaire	
<b><u>7 Nov. 2005</u></b>		
09.00 – 14.00	- Individual interviews	- NICE Section Heads
	and observe the utilization and	

maintenance of equipments and

reproduction of publications

15.30 – 16.30

- Mr. USUI Tetsuro

Project Coordinator

- The Project for

Improvement

of Sewage Treatment

Plant Management

in Thailand

**8 Nov. 2005**

09.00 – 11.00

- Dr.Sara Arphorn

- Faculty of Public Health

Mahidol University

13.30 – 14.30

- Mrs. Y Ujita

- ILO



**18 Nov. 2005**

13.30-16.00	President and member	- OSH Inspector Association of Nakhorn Rajasima Province / Owner of Nakhornchai Tour Company Ltd.
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**21 Nov. 2005**

09.00 – 11.00	- Ms.Rattana Raktrakul	- Office of OSH, Coordinator of Safety Efficiency Development Group, DOI, MOI
	- Mrs.Helen Aromdee	- Specialist for Chemical Safety and Major Hazards
13.15 – 15.20	- Mr.Nattawat Monthewan	- DLPW Inspector

## Annex 8 Evaluation Questions and Its Results

### Ex-post Evaluation Study on The Project on Strengthening of the National Institute for the Improvement of Working Conditions and Environment (NICE Project)

Evaluation Questions		
Impacts		
Main Questions	Sub Questions	Results
1. How far has the overall goal to protect workers from industrial accidents and occupational diseases achieved since the terminal evaluation?	1.1 What was the important achievement at project termination?	Occurrence of total occupational accidents decreased from 45.27 per 1,000 workers at baseline (1996) to 29.20 in 2002.
	1.2 How far has the current number of occupational accidents and diseases decreased since project completion?	Even until 2004 the total number of injuries, 29 per 1,000 workers, has not yet reached the declared target. However, the rates of injuries occurrence indicate a trend of constant decrease every year.
	1.3 Has the present achievement reached the planned target set by the Ministry of Labor and Social Welfare?	No.
	1.4 Which industrial sectors can achieve the set target most?	According to the Labour and Welfare Statistics on Safety Labour Inspection in the Whole Kingdom by Industry in 2004, conducted by DLPW, the financial intermediation industry have lowest percentage of illegal establishments, followed by Health and Social Work and Education respectively. . These sectors deal mainly with service work, safety is, therefore, one of the key elements of the business in creating trust to its clients.

<b>Evaluation Questions</b>		
<b>Impacts</b>		
<b>Main Questions</b>	<b>Sub Questions</b>	<b>Results</b>
	1.5 Which industrial sectors can not achieve the set target and why?	According to the above mentioned Statistics, the mining and quarrying industry has the highest percentage of illegal establishments, followed by the manufacturing, fishing and construction. The high inspected illegal types that complied with the illegal provision under safety and health law are employees' work safety, fire accident, electricity, machine, and chemical hazards. The work sites of these sectors are generally scattered and many of them using sub-contracted systems. As a result, it is difficult to manage the safety system in these kinds of business.
2. What is the present movement of NICE and related agencies to strengthen occupational safety and health (OSH)?	2.1 How are the industrial safety training courses, both basic and advance, for OSH inspector and for persons in charge of safety and health management being managed?	The SH inspectors training courses were being managed by private consultant firms through outsourcing system.

<b>Evaluation Questions</b>		
<b>Impacts</b>		
<b>Main Questions</b>	<b>Sub Questions</b>	<b>Results</b>
	2.2 Are there any newly developed curricula and textbooks after project termination and who are the target groups?	<p>Yes. Examples of the new curricula that have been developed are as followings:</p> <ul style="list-style-type: none"> <li>- Training courses on safety promotion in schools and academic institutes</li> <li>- Training on WIND Technique for Farming Leaders in Surin Province in collaboration with the Department of Agricultural Extension, 2004</li> <li>- Training on WISCON Techniques for DLPW staff (representatives from NICE headquarters, RICEs and Provincial Offices of Labour Protection and Welfare) with financial support from the ILO, November 2005 etc.</li> </ul> <p>Another 21 manuals and guidelines based on the research findings were also published. The publication of some research reports and manuals has been supported by the enterprise and funding agencies. However, due to a lower annual budget for publication, the number of copies of research reports per topic was generally lower than in the Project period except for those supported by the enterprise.</p>
	2.3 How many OSH personnel of private enterprises were trained?	The average number of SH inspectors trained per year after the Project (29,645 persons/year) is higher than during the Project (19,616 persons/year).

<b>Evaluation Questions</b>		
<b>Impacts</b>		
<b>Main Questions</b>	<b>Sub Questions</b>	<b>Results</b>
	2.4 How was the information on OSH provided by NICE and related agencies? Is it an easy to access system?	<p>New publications and the ones produced during the Project were distributed to target groups and stakeholders on various occasions such as SH Inspectors training and Safety Week. Many copies were also sent to RICEs for further distribution.</p> <p>Beside research reports, manuals and guidelines, researchers were encouraged to write articles or present their findings in national and international conferences. The Safety Newsletter being published by NICE and Safety @ web (<a href="http://www.nice.labour.go.th">www.nice.labour.go.th</a>) are other channels where information on safety is effectively disseminated.</p>
	2.5 How does the cooperation between NICE and MOH for joint activities effect the protection of workers from accidents and diseases?	Very much. NICE has closely cooperated with MOH. MOU on protection of workers from diseases and health promotion between NICE and Department of Medical Services and Department of Communicable Disease Control have been signed.
	2.6 How does the cooperation between NICE and MOI (and with other agencies) effect the inspection and promotion of industrial safety?	<p>Representative of MOI, from the Department of Industrial Works, is a committee member of the National Tripartite Committee on Occupational Safety, Health and Environment, of which the Occupational Safety and Health Inspection Division (OSHID) is the secretary.</p> <p>Close collaboration with other agencies also contributed to more active inspection and promotion of industrial safety such as cooperation with the Mahidol University in research and training activities. MOU has also been made between NICE and Mahidol University on the cooperation in the development of safety and health curricula as well as in provisions of supports in teaching and training of students.</p>

<b>Evaluation Questions</b>		
<b>Impacts</b>		
<b>Main Questions</b>	<b>Sub Questions</b>	<b>Results</b>
3. How is the progress of reviewing and/or upgrading occupational safety and health (OSH) legislation/act?	3.1 How far is the progress of the issuing of Ministerial Regulations and Notifications in connection with SH under the Act (Section 1 of Article 103)?	After the Project completion, there was an enactment of 9 Ministerial Regulations on occupational safety (4 regulations were announced in 2004 and 5 regulations announced in 2005) and a legislation on occupational safety, health and working environment announced in 2005.
	3.2 Who are responsible for the review of OSH legislation /act and how far is the progress?	OSHID is responsible for the review and drafting of new OSH legislations. The drafts will be considered by the National Tripartite Committee on Occupational Safety, Health and Environment prior to submission to the Council of the Member of the Parliament for the final approval.
	3.3 What are the factors affected the progress?	According to the study results, an observation was made that the present review and approval process is time consuming, while many more legislations /acts are needed to be prepared.
4. Are there unintended positive and negative effects as a result of the operation of NICE Project?	4.1 What are unintended positive and negative effects of the Project?	<p><u>Higher demand for SH inspectors training requires more efficient quality control of the Outsourcing system:</u> After the Project, the responsibility for the organization of SH inspectors training courses were transferred from NICE to the out sourcing system. As a result, many consultant firms have been established and applied for the license for the organization of SH training courses and the number of inspectors received training increased rapidly. After some years, observations are made by both the trainees and responsible personnel at NICE that some consultant firms have the problems with the declining quality.</p> <p>At present, NICE is considering about the improvement of the selection criteria, and monitoring and evaluation processes to make sure that the certified firms have a consistent standards.</p>
	4.2 What are the unintended gains/good points of the Project? Who benefited most?	

<b>Evaluation Questions</b>		
<b>Impacts</b>		
<b>Main Questions</b>	<b>Sub Questions</b>	<b>Results</b>
5. What factors contributed to positive and negative impacts?	5.1 What are the positive /negative impacts of the Project?	<ul style="list-style-type: none"> <li>- The rates of injuries occurrence indicate a trend of constant decrease every year.</li> <li>- As the functions of NICE have been strengthened, 289,039 SH inspectors have been trained since Project began until Oct., 2005.</li> <li>- Ideas and practical experience in preparing manuals and guidelines derived from the Project enabled NICE to continuously develop another 21 guidelines /manuals and 6 research reports. Distributed research reports and publications including SH information in various forms have raised the awareness of the workers and entrepreneurs in the establishment of safety system at work sites.</li> </ul>
	5.2 Are there any changes in the government policy that contributing to positive/negative impacts?	<p>Yes.</p> <p><u>Contributing factors:</u> The policy and the enactment of the followings have contributed to the sustainability and wider impacts of the Project to a certain level, which leads to evaluate them as one of the promoting factors :</p> <ul style="list-style-type: none"> <li>- The policy towards “Kitchen of the world” and the promotion of safe food production</li> <li>- “OTOP Strengthening Programme” aiming at export markets</li> <li>- FTA agreements between Thailand and partner countries etc.</li> </ul> <p><u>Inhibiting factors:</u></p> <ul style="list-style-type: none"> <li>- The government policy to freeze the increase of permanent officials makes it not possible for NICE to recruit more officials though there is a bigger demand. Recently, NICE is in the process of adjusting its working approach to be more flexible and able to mobilize cooperation from working partners to work with high risk industries and SMEs more effectively.</li> </ul>

<b>Evaluation Questions</b>		
<b>Sustainability</b>		
<b>Main Questions</b>	<b>Sub Questions</b>	<b>Results</b>
1. How has NICE been maintaining the project activities and services provided by the Project?	1.1 How are the equipments purchased by the Project been maintained and utilized?	(1) Utilization of the new building and workshop was evaluated as high. On October 29, 2003 the new building was officially opened. The new building is being used as offices of NICE and OSHID. It has facilities for training, laboratories, safety library, and exhibition hall.  (2) The utilization of supplied machine and equipment is evaluated as low. As 79% of the provided machinery are in good condition and being used in training activities and the assessment of working environment etc., while the rest are deteriorated. Some equipment procured from Japan, often had a problem with availability of spare parts in Thailand or too expensive to repair. The bio-lab has been closed down after the resignation of the C/P a few months ago as there was difficulty in the recruitment of a medical technician as replacement.
	1.2 Are there necessary equipments been purchased after the project end?	When necessary, NICE purchased new equipment in Thailand i.e. computer programs and cameras etc.
	1.3 Are there additional guideline/manuals that have been produced and reproduced?	Yes. - Many research projects have been continuously conducted even since the Project completion. Another 21 manuals and guidelines based on the research findings were also published. More action researches or research at the work sites in close cooperation with the private sector were conducted.
	1.4 Do training, seminar and workshops	



<b>Evaluation Questions</b>		
<b>Sustainability</b>		
<b>Main Questions</b>	<b>Sub Questions</b>	<b>Results</b>
	being organized meet with the demands of private enterprises?	Yes. However, the relevance of the training curriculum was evaluated as maintained. As the interviews with the inspectors who have passed the training revealed the fact that the training could provide trainees with necessary information and knowledge about OSH but not enough incentives in the establishment of safety systems have been motivated.
2. What factors are contributing to or inhibiting the Project effects or sustainability?	<p>2.1 Are there any policy and measures enabling continuous staff development ie. technical exchange and capability training on specific area?</p> <p>2.2 Are there any changes in the government policy?</p>	<p>Yes.</p> <p><u>Contributing factors:</u> The policy and the enactment of the followings have contributed to the sustainability and wider impacts of the Project to a certain level, which leads to evaluate them as one of the promoting factors :</p> <ul style="list-style-type: none"> <li>- The policy towards “Kitchen of the world” and the promotion of safe food production</li> <li>- “OTOP Strengthening Programme” aiming at export markets</li> <li>- FTA agreements between Thailand and partner countries etc.</li> </ul> <p><u>Inhibiting factors:</u></p> <ul style="list-style-type: none"> <li>- The government policy to freeze the increase of permanent officials makes it not possible for NICE to recruit more officials though there is a bigger demand. Recently, NICE is in the process of adjusting its working approach to be more flexible and able to mobilize cooperation from working partners to work with high risk industries and SMEs more effectively.</li> </ul>

<b>Evaluation Questions</b>		
<b>Sustainability</b>		
<b>Main Questions</b>	<b>Sub Questions</b>	<b>Results</b>
	2.3 Does NICE receive increase budget allocation for the planned activities?	<p>Yes. NICE received adequate annual budget allocation from DLPW. In particular the budget of NICE for FY 2005 is high. The Administration Section Head explained that, the extra budget was for buying cars for RICE Centers, for the maintenance of the new building, as well as for the repair and maintenance of the mobile training car which was provided by the Project.</p> <p>The budget allocations of NICE show the concerns and commitment of the Thai government in not only maintaining the existing capability but also further strengthening NICE headquarters and RICEs to be able to work more efficiently in coping with wider targets.</p>

<b>Evaluation Questions</b>		
<b>Sustainability</b>		
<b>Main Questions</b>	<b>Sub Questions</b>	<b>Results</b>
	2.4 What are the trend changes towards SOH education and an establishment of preventive measures that may affect project sustainability?	<ul style="list-style-type: none"> <li>- Linkages and wider cooperation between NICE and international organizations and the rapid industrial growth have created a bigger demand for OSH supervisory and assessment services from NICE.</li>   <li>However, as NICE has limited personnel when compared to the large demand. Though NICE has good equipment and machinery and has received quite reasonable budget allocations during the past few years, it was not enough for a quick adjustment in order to be able to cope with the changing situation.</li>   <li>- Moreover, the Thai people in general still have limited understanding about OSH. This condition provides a complicated scenario for NICE which requires good public relations and a more proactive working approach: in public relations, positive measure to motivate OSH management particularly small and medium enterprise i.e. provision of credit without or with low interest rate.</li> </ul>
3. How the transformation into an independent administrative institution affected the role of the Center?	<p>3.1 Are there any changes in regards to organization charts and division of roles and responsibility of the Ministry and DLPW?</p> <p>3.2 Are there any negative or positive changes as a result of the transformation?</p>	<ul style="list-style-type: none"> <li>- The Thai government has resolved, in principle, for the setting up of an APO under MOL. The results of the study on APOs confirmed that an APO should be developed in any country. However at this stage, there is no clear conclusion on this subject matter yet.</li> </ul>

<b>Evaluation Questions</b>		
<b>Sustainability</b>		
<b>Main Questions</b>	<b>Sub Questions</b>	<b>Results</b>
4. Do the manuals/guidelines or the training initiated by the Project be practical in the regional level or private enterprises?	4.1 Do the private enterprises establish safety management systems and follow the guidelines?	- The relevance of the training curriculum was evaluated as maintained, as it provides the necessary basic knowledge about OSH and insightful information regarding their rights and who to contact. However, the lack of incentive which comes from the worry about the cost of the establishment of safety systems, having no clear evidence of the benefits that the enterprise will get from the implementation, and having limited information on easy and cheap technology for OSH, often hinders private enterprise, especially small establishments, from the proper management of safety systems.
	4.2 Are there any mechanism of data collection on necessary topic and use the information gained in modification of training session design including the development of manuals /guidelines?	- Research activity and production of manuals / guidelines were evaluated as high, as there were more involvements and financial contribution from private enterprises i.e. in identification of the needy research topics and provision of financial support for the study, for the publication of research reports including manuals based on the research findings.
	4.3 Has any research finding been used in developing or modifying the manuals/ guidelines or the training provided by NICE?	
	4.4 Are there increase demands of private enterprises in OSH services?	Yes.