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**Additional Information:**

- This is a conference paper.

**Metadata Record:** [https://dspace.lboro.ac.uk/2134/30587](https://dspace.lboro.ac.uk/2134/30587)

**Version:** Published

**Publisher:** © WEDC, Loughborough University

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INTRODUCTION

1. In 1979 the Government of Thailand created a new state enterprise, the Provincial Waterworks Authority (PWA), responsible for the supply of water in most urban areas outside Bangkok. In 1982, with funding from Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), GmbH, the Authority appointed Coopers & Lybrand as its consultants on the Management and Finance Project (MFP). The project, which is still continuing, is one of the largest and most comprehensive institutional development projects ever undertaken in the water sector.

2. The improvements in the PWA's performance have been impressive. An operating loss of 39 million baht in 1982 became an operating surplus of 188 million baht in 1986. Between 1982 and 1986 the volumes of water produced and of water sold rose by, respectively, 22% and 25%. The number of employees fell from 15,47 per thousand connections to 11,71 and the number of connections increased by 31% from 333,000 to 437,500. The Thai Government has embarked on a programme to ensure that public enterprises meet operating requirements without Government financed subsidy. The PWA is one of the first public enterprises to meet this requirement.

3. The PWA is now regarded by the Government as a 'model public enterprise' and is used for management study tours by other organisations in the Thai public sector. The public and press have a more favourable attitude towards its performance. The Authority is more attractive to international aid and lending agencies and development programmes are now underway involving, for example, the World Bank, KfW, the ODA, JICA and UNDP, as well as GTZ.

4. The purpose of this paper is to focus on the contribution to the institutional development process made by the PWA's Training Centre and specifically the methodology which was used to identify, on a systematic and objective basis, the training needs of the 1,100 headquarters and regional staff in the PWA.

5. Because the PWA had no system of staff performance appraisal there was no regular, systematic assessment of the training, education and development needs of individual members of staff. It was therefore decided to remedy this by commissioning a tasks and skills analysis exercise to be undertaken jointly by the PWA's Training Centre and line managers. The remainder of this paper sets out the principles of the exercise and its results as follows:-

(a) objectives
(b) procedures
(c) analysis and findings

6. The objectives of the exercise were contained in the terms of reference which required us to:-

"Carry out tasks analysis and prepare a skills inventory for defining training needs in the areas of supervision, management and technical skills at PWA Headquarters and Regional Offices".

7. The objective was to define, by a process of tasks and skills analysis, the training gap, i.e. the difference between the level of skills required in each job compared with the level of skill possessed by each postholder. The information produced by the analysis would therefore show the training needed by each postholder and, when aggregated, the overall size of the training task for various groups of staff. It also enabled training priorities to be assessed because the approach adopted included provision for line managers/supervisors to indicate their views on where the priorities for training lay.

8. Procedures for the exercise were centred on a data collection form which is set out at the end of this paper. This form was in the Thai language. In summary the process of tasks and skills analysis was as follows:-

(a) a team of PWA analysts was briefed about the technique;
(b) for each post details of:-
   (i) analyst name
   (ii) post title
   (iii) post grade
   (iv) department/region
   (v) division
   (vi) section

Tasks and Skills Analysis
were entered on data collection forms by the analysts:
(c) brief summaries of the duties and tasks of each job were entered onto each form by the analysts. Job descriptions were used for this purpose; where job descriptions did not exist, duties and tasks information was obtained through discussions between the analysts and line managers/supervisors;
(d) factfinding discussions were held with line managers/supervisors to:-
   (i) agree the "duties and tasks" information on the form;
   (ii) establish details of the minimum levels of education and experience required for each post;
   (iii) establish details of the skills and knowledge required to carry out the agreed duties and tasks including, where appropriate, basic, middle or advanced management skills;
   (iv) establish any special job-related requirements, which were then entered in the "additional comments" box on the form;
   (v) establish the number of staff working in each particular job and enter this information on the form;

(e) each data collection form was photocopied (one for each postholder in each job) and the copies returned to the line managers/supervisors of functions so that they could enter the following on each individual form:-
   (i) the name of the postholder;
   (ii) details of the education level and experience of the postholder;
   (iii) a mark in the "performance satisfactory" or "more training needed" box depending on the line manager/supervisor's view of the performance of the individual concerned;
   (iv) a priority rating (described below) for the areas where more training was needed;
   (v) an indication of whether the postholder needed training in basic, middle or advanced management training skills. Background briefing notes on these three management training levels were provided to help managers/supervisors. Finally, managers/supervisors were given the opportunity to enter on the form any special comments relating to training needs.

(9) As mentioned above, the system of data collection incorporated a mechanism to allow line managers/supervisors to indicate the priorities attaching to the training needs of their staff. The priority ratings used were as follows:-

<table>
<thead>
<tr>
<th>Priority Rating</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2 or 3</td>
<td>High priority; training required as soon as possible.</td>
</tr>
<tr>
<td>4, 5 or 6</td>
<td>Medium priority; training required in the medium term.</td>
</tr>
</tbody>
</table>

7 and above Low priority; training to be provided in the longer term.

(10) From the completed sets of forms for each post the analysts then completed a summary of the training needs on a further form showing:-

(a) the skills (training) required, in priority rating order;
(b) the number of staff requiring training;
(c) the number of staff whose level of education/experience was below that required for their post.

(11) The analysis and findings covered a total of some 200 different types of post (in headquarters and regions) and the following analyses were produced:-

(a) for each headquarters division, details of the training subjects (skills) required, the numbers of staff requiring them and the priority ranking attaching to the training (ie. short, medium or long term);
(b) for each of the regions, an analysis similar to that referred to above;
(c) an analysis of the twenty training subjects (skills) most urgently needed in the short term in headquarters' departments;
(d) an analysis similar to that referred to in (c) above for each of the regions returning data; and
(e) an analysis of (c) and (d) above showing the twenty most urgently needed training subjects (skills) in headquarters and regions.

In this way line managers/supervisors and Training Centre management were provided jointly with a wide range of quantified information on the training required in the PWA ranked in order of priority.

12. The benefits of the exercise can be summarised as follows:-

(a) the tasks and skills analysis output provided the foundation for a regular staff performance appraisal system to be installed by the PWA;
(b) basic training records were established for each person covered by the analysis;
(c) the output of the exercise provided a sound basis for the development of training plans, programmes and courses to be established jointly by line managers/supervisors and the Training Centre;
(d) the effectiveness of the training to be provided could be judged against agreed training objectives.

13. It is interesting to note that the top ten subjects where significant amounts of training
were required were, in order of priority, basic management skills, training skills, operations and production system management, technical English, computer application skills, accounting systems' skills, statistics and data evaluation techniques, budgeting, project preparation, development and communications skills.

14. Further information on successful, practical application of this systematic approach to the tasks and skills analysis process, closely involving line managers, are available from the author on request.
## PROVINCIAL WATERWORKS AUTHORITY OF THAILAND: TASKS AND SKILLS ANALYSIS

<table>
<thead>
<tr>
<th>Analyst name</th>
<th>Date of interview</th>
<th>Form number</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Post title</th>
<th>Name of postholder</th>
<th>Department/Region</th>
<th>Division</th>
<th>Section</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Grade</th>
<th>Education level/Experience required for post</th>
<th>Education level/Experience of postholder</th>
<th>Manager/Supervisor</th>
<th>Date of appraisal by manager/.supervisor</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Main duties and tasks</th>
<th>Skills and knowledge required</th>
<th>Performance satisfactory</th>
<th>More training needed</th>
</tr>
</thead>
</table>

| Basic management skills | Middle management skills | Advanced management skills |

<table>
<thead>
<tr>
<th>Additional comments (if any) from analyst</th>
<th>Additional comments (if any) from manager/supervisor</th>
</tr>
</thead>
</table>