Water and Primary Health Care for Tibetan Villagers

Quality Assurance Series
No. 29 February 2002

The Australian Government's
Overseas Aid Program

Water and Primary Health Care for Tibetan Villagers

Quality Assurance Series
No. 29 February 2002

The Australian Government's
Overseas Aid Program

ISBN 0 642 76310 0

ISSN 1442–7176

Published by the Australian Agency for International Development (AusAID), Canberra [May, 2002]

Design by Griffiths & Young, Canberra

Set in Rotis

Printed in Australia by Panther Publishing and Printing

For further information about the Australian aid program, contact:
Office of Review and Evaluation
AusAID
GPO Box 887
Canberra ACT 2601
Phone 02 6206 4000
Fax 02 6206 4880
Internet www.ausaid.gov.au

Cover photograph: Courtesy of Dr Rob Condon

CONTENTS

ABBREVIATIONS

ACWF	All China Women's Federation
AMC	Australian Managing Contractor
ATL	Australian Team Leader
AusAID	Australian Agency for International Development
CHEPC	City Hospital & Epidemic Prevention Centre
CI	Confidence Interval
CMS	Cooperative Medical Services (also called Cooperative Medical System or Cooperative Medical Schemes)
COFTEC	Commission of Foreign Trade and Economic Cooperation
DOFTEC	Department of Foreign Trade and Economic Cooperation
EPS	Epidemic Prevention Service
GOA	Government of Australia
GOPRC	Government of the People's Republic of China
HDPE	High Density Polyethylene
IMCI	Integrated Management of Childhood Illness
IMR	Infant Mortality Rate
iNGO	International Non-Government Organisation
KAPB	Knowledge, Attitudes, Practices & Behaviours
MCH	Maternal and Child Health
MMR	Maternal Mortality Rate
MOFTEC	Ministry of Foreign Trade and Economic Cooperation
MOU	Memorandum of Understanding
MTR	Mid-Term Review
O&M	Operation & Maintenance
PCC	Project Coordinating Committee
PDD	Project Design Document
PHB	Public Health Bureau
PHC	Primary Health Care
PWRB	Prefecture Water Resources Bureau
RMB	Renminbi
RWS	Rural Water Supply
TAR	Tibet Autonomous Region of the People's Republic of China
TB	Tuberculosis

TCM	Traditional Chinese Medicine
VHW	Village Health Worker
WMC	Water Management Committee
WRB	Water Resources Bureau, usually Municipal WRB
WSS	Water Supply System

Explanatory Notes

i) The Tibet Autonomous Region of the People's Republic of China is made up of the Municipality of Lhasa (divided into 8 counties) and 6 Prefectures (divided into 66 counties)[1]. Each county is further divided into townships, each with responsibility for a number of villages. Shigatse Municipality is a county-sized area at the centre of Shigatse Prefecture. The rural area of the municipality has a population of approximately 67,000 in 165 villages administered through ten townships. Each administrative village may consist of several associated natural villages.

ii) In China, the title 'doctor' is a courtesy title for anyone who delivers medical care. It may denote somebody who has undergone formal medical training, or a non-medically qualified person who delivers primary and preventive health care (e.g. a village health worker). In the present report, we have followed this convention for use of the term 'doctor'. The nature of the individual health worker's professional training will generally be clear from the context. For example, a 'village doctor' is a village health worker with a variable (but basic) level of training, a 'township doctor' has up to three or even four years' training, while a 'hospital doctor' has formal post-secondary qualifications in medicine.

Exchange Rates

Indicative Exchange Rates recorded in the Project Completion Report were:

1998: A$1 = 5.3 RMB

1999: A$1 = 4.9 RMB

2000: A$1 = 4.3 RMB

1 The Tibet Map Institute. Other sources give slightly different numbers.

EXECUTIVE SUMMARY

Overview

The Tibet Primary Health Care and Water Supply Project was the first bilateral technical cooperation and development project in the Tibet Autonomous Region (TAR) of China. The goal of the Project was to strengthen and support the GOPRC's capacity to deliver health services and supply water to the rural villages of Shigatse Municipality.

As it was the first Project to be implemented in the difficult climatic, physical and institutional conditions in the TAR, it was designated a 'pilot'. The Project commenced on 15 December 1997 with an initial budget of $A2.8 million. Health components were completed on 14 December 2000, and the rural water supply component was completed on 30 September 2001, at a total cost to the Australian Government of A$4.31 million.

In spite of design limitations (outlined below), the Project has significantly strengthened the capacity of the Shigatse Municipality to deliver primary health care (PHC) services and health education to the rural poor. The technical depth of the Australian Managing Contractor (AMC), especially in PHC and health promotion, contributed strongly to the achievements of the Project. The Project objective of constructing 54 new rural water supply systems (WSSs) was also achieved; however, the transfer or retirement of trained personnel and limited resources for operations and maintenance may diminish the long-term benefits of those and other water systems.

Project Evaluation

In October and November 2001, a joint Australian and Chinese team evaluated the Project. Its objectives were to assess the Project's relevance, effectiveness, efficiency, impact and sustainability, and to identify lessons that might guide future health and water supply projects in Tibet.

The evaluation included extensive consultation with AusAID staff, the AMC team, Chinese Government and Shigatse Municipality partners, health and water supply workers, non-government organisations, community leaders and other community members. In the field, the evaluation team assessed 17 township and village clinics and 19[2] rural WSSs.

Project Design and Implementation

The Project design included four components: Primary Health Care; Rural Water Supply; Health Education; and Project Management.

Villagers living in the rural townships of the Shigatse Municipality were the primary target population. Secondary target groups included village and township health workers, community leaders, and staff of the Municipal Health and Water Resources Bureaux.

2 Sixteen of which were built by the Project.

The AMC was the Australian Red Cross, in association with the Macfarlane Burnet Centre for Medical Research, ANUTECH and the Swiss Red Cross. Counterpart implementing agencies included the Shigatse Municipal Government (for project management), the Shigatse City Health Bureau, Hospital and Epidemic Prevention Centre (for PHC and health promotion) and the (Shigatse City) Municipal Water Resources Bureau (for rural water supply).

The objectives addressed by the Project (improved health and household water supply) were appropriate to the needs of the rural townships of Shigatse Municipality where, prior to the Project, access to basic health care and clean water was poor.

Given the designation of the Project as a 'pilot', the inclusion of components addressing both health and water supply added complexity to the design. There was a long gestation (from 1991 until late 1997), which involved a number of teams visiting the TAR and several modifications to the Project design. In spite of this, the final Project design still lacked clarity and, in particular, overestimated the capacity of local counterparts and underestimated the demands on the Project management team.

Additional factors that impeded the smooth implementation of the Project included:

- The main counterparts were unfamiliar with development cooperation mechanisms, and their physical and human resources capacity was untested.
- The Project commenced in the middle of the Tibetan winter (December 1997), when it was impossible to conduct baseline water surveys, begin WSS design and construction, and implement the formative social research that would guide the Project's health components.
- Most of the target population lived in villages that were inaccessible at certain times of year.
- The PDD was not translated into Chinese until well into the first year of the Project, resulting in lack of clarity about respective roles and responsibilities.
- The inception phase allowed by the PDD[3] was too short to establish the Project office, undertake baseline surveys and draft the first annual work plan.
- The emphasis on AMC outputs may have been too ambitious for a pilot project.

Although the AMC was implementing its first technical cooperation project, its performance was strong and it adapted well to the conditions. The Project was completed on time and within budget ($A4.31 million after agreed extensions).

Achievement of Project Objectives

COMPONENT 1 — PRIMARY HEALTH CARE

The Project has improved the quality and coverage of PHC services, and strengthened the capacity of the Shigatse Municipality to deliver PHC services to the rural poor. Major achievements include:

3 The PDD cites 10 weeks, the PCR mentions 6 weeks.

- Construction or rebuilding, and equipping, 8 rural township clinics[4] and 82 village clinics[5].
- Basic training of 35 village doctors (19 male and 16 female); refresher and additional training of 94 village doctors (75 male[6], 19 female), 36 township clinic staff (5 male, 31 female) and four City Hospital medical specialists; and training of 10 health trainers (6 male, 4 female).
- Increased utilisation of many township and village clinics.
- Improved diagnostic and treatment facilities at the new City Hospital and Epidemic Prevention Centre (CHEPC; constructed with GOPRC funding as part of the Project), with guaranteed free access for patients referred from rural communities.
- Development of high quality training materials and clinical reference manuals in Tibetan, Chinese and English. These have been adopted in other areas of Tibet.

There are some areas where intended Project outcomes were not fully achieved. The standard of construction of both township and village clinics is variable; community involvement in clinic construction achieved better building quality and a greater sense of ownership than clinics built by contractors.

The vaccine cold chain remains fragile at township and village level — outbreaks and sporadic cases of measles continue to occur in the Project area.

In development cooperation activities, responsiveness to partner government policy changes is important; however, the Project had limited engagement with government at the health policy and planning level. The introduction of a Cooperative Medical Scheme (CMS) midway through the Project, coupled with increased availability of low cost pharmaceuticals through a competitive tendering process, has limited the impact of Project outputs on essential drugs, rational prescribing and the dispensing practices of village and township health staff.

Water quality testing of Project WSSs has not continued.

COMPONENT 2 — RURAL WATER SUPPLY

The Project's major rural water supply achievements include:

- Improved water quality and volume through construction of piped WSSs in 54 rural communities.
- Introduction of participatory design and construction processes for community WSSs.
- Development of technical capacity within the Municipal WRB.
- Training and equipping of village Water Management Committees (WMCs).

The initial target to construct 54 WSSs within two years was overly ambitious. An extension of the time allowed from 2 years to 3 years and 9 months, with additional AusAID funding, including for technical support, was required to meet this target.

As with the clinics, community involvement achieved better standards of construction and a greater sense of ownership than contractor-built WSSs.

4 Two by GOPRC.

5 Twenty-two by GOPRC.

6 Ten of these individuals were due to retire within 2 years.

COMPONENT 3 — HEALTH EDUCATION

The Project has strengthened the capacity of the Shigatse Municipal Health Bureau to improve health and environmental health education services, and has had a significant impact on the understanding by rural communities of key preventive health actions. Major achievements include:

- Baseline and follow-up studies in knowledge, attitudes, practices and behaviour.
- Development of culturally sensitive, clearly illustrated health promotion resources in the areas of hygiene, safe motherhood and child health.
- Training of 298 (201 female) community educators in hygiene and 380 (253 female) in safe motherhood.

As with clinical training materials, Project health promotion resources have been adopted by organisations working elsewhere in Tibet.

A program of education of 240 community members in child health (planned for just after Project completion) did not go ahead due to the non-availability of funding through the Municipal Health Bureau.

Benefits to Target Populations

Access of villagers in the Shigatse Municipality to clinical and preventive health services almost doubled during the Project, from 47% in 1998 to 83% in 2000. Community members have a health work force with better skills in health promotion, management of childhood illness, pregnancy, general medical consultations, first aid, and injection practices.

Approximately 40% of villages visited by the evaluation team also cited improved drug supply as a broad benefit from both the Project and the introduction of CMS (the two being seen as related aspects of a general improvement in health services).

The increased involvement of women as health workers and trainers (as well as in village WMCs) is expected to contribute to safe motherhood. Township clinics report an almost three-fold increase in the number of clinic deliveries, and a corresponding downward trend in home births being attended by a village doctor or township midwife[7].

Identified benefits from village WSSs include improvements in hygiene and, primarily, saving of time and effort in collecting water. The Municipality health information system was not well enough developed to demonstrate if there was an improved health status; villagers with new WSSs anecdotally report a reduction in the incidence of diarrhoea, hepatitis, skin sores and eye infections. The Project also identified lower back pain as a common ailment in the community, and developed a 'back-happy' tap stand to ease lower back strain for villagers collecting water.

7 An incentive payment of 100 RMB to mothers delivering in township clinics may influence the number of clinic deliveries.

Through their involvement in water supply construction, and the training provided to members of WMCs, villagers have developed essential skills for the maintenance and extension of WSSs, and for other village construction work. There is also improved income potential as water carriers have more time for productive work and water is available for household vegetable gardens.

Benefits from Project health education activities are reflected in changes in health-related knowledge, attitudes and practices in the areas of health seeking behaviour, safe motherhood, breast-feeding, hygiene, and the management of childhood diarrhoea. However, there has been little change in the proportion of mothers giving inappropriate or hazardous complementary feeds to infants.

Sustainability

Grass root benefits in health are likely to be maintained for some time in areas that require little or no infrastructure support, such as improved clinical diagnosis and treatment by health workers, and village level health promotion in child health, infant nutrition and safe motherhood. Where there is strong support of village and township leaders for health promotion activities, the impact of these activities is likely to be maintained. The major threat to health outcomes is the abrupt curtailment of financial support for community health promotion activities and health worker training on completion of the Project. Resumption of Health Bureau support for training of health workers and education of other community members is essential if the benefits from these activities are not to be lost.

Improved access to water supplies and health services will help to sustain community hygiene practices, particularly in those villages where community members made a clear link to the health benefits of these interventions.

Strong community ownership and appropriate, simple technologies have helped village WMCs to perform most of their own maintenance and repairs. Almost all WMCs have sufficient funds to purchase replacement parts. Factors working against sustainability include missing system designs, missing tools, a lack of awareness of the large quantity of spare parts that is still available at the Municipal WRB in Shigatse, and the rapid structural failure of some WSS components (e.g. hatch covers) in the extreme climate.

The transfer or retirement of Municipal WRB staff, and a lack of funds and transport, threaten the sustainability of WSS outcomes, especially the ability of the WRB to assist WMCs to rectify WSS problems which are beyond the WMCs' capacity to repair.

The rate of health reform throughout PRC is rapid. Due to its Municipal base and limited engagement at Prefecture and Regional level, Project achievements remain vulnerable to significant shifts in health policy. The lack of formal engagement at higher levels also restricted the exposure and dissemination through Government channels of some excellent products developed by the Project (e.g. health education and training materials).

Implications for Future Projects

Key lessons learned, that carry important implications for future health and water supply projects in Tibet, include:

1. The PDD must take full account of AusGUIDE requirements, and lessons from AusAID's Quality Assurance Group on common weaknesses in design.
2. The PDD must be translated into the language(s) of implementing partners before project commencement.
3. The combination of the role of Australian Team Leader and specialist manager of one of the technical components of a Project may be a false economy, if peaks in technical and administrative activity coincide. Moreover, a Project design that includes activities across more than one sector will increase the administrative demands on the Team Leader. In these circumstances it is even less realistic to expect the Team Leader to also provide detailed technical supervision of a specific Project component.
4. Care should be taken with the timing of project commencement, as there are periods of the year when some activities are almost impossible due to religious and cultural festivals or adverse weather conditions.
5. In untried environments, careful assessment of counterpart capacity and a longer inception phase are necessary to assist project planning, the assessment of baseline conditions, and the clarification of roles, responsibilities and development cooperation processes. Likely training inputs to achieve required outputs need to be assessed at the design phase or during the extended inception phase. Seminars for partner organisations to explain the development objectives and approaches of a project may minimise the risk of misunderstanding of roles, responsibilities and implementation strategies.
6. Even when the primary implementing partner is a municipal or county authority, avenues for engagement with the Provincial (i.e. Regional) or Prefecture government can help a project to contribute to policy development, and to anticipate and adapt to changes in the policy environment.
7. Where changes in health policy may impact on project performance, a Health Policy, Planning and Financing component (including strengthening of health information systems) should be included in the project design.
8. Active collaboration with other donors and iNGOs can broaden the geographic spread and strengthen the sustainability of a project's impact.
9. Community involvement (with adequate technical support), rather than using contractors, is preferable for small-scale construction projects.
10. Even in projects that encourage self-reliance in community members in villages and townships, project benefits are unlikely to be sustainable after donor inputs cease unless there is institutional capacity available to 'backstop' the maintenance of these benefits. This may require some 'earmarked' recurrent cost funding and ongoing active engagement with partner government authorities about financial aspects of the project's exit strategy.

西藏日喀则市初级卫生保健与供水项目

评估报告

内容提要

概述

西藏初级卫生保健和供水项目，是澳大利亚在中国西藏自治区的第一个双边技术合作与开发项目。该项目的目标是加强和支持中国政府为日喀则地区农村村庄提供卫生服务和供水的能力。

由于该项目是在一个气候恶劣、物质和社会环境条件艰苦的地区实施，该项目曾经被称为“试点项目”。该项目于 1997 年 12 月 15 日启动实施，最初的预算为 280 万澳元。其中卫生子项目于 2000 年 12 月 14 日完成，改水子项目于 2001 年 9 月 30 日完工，项目最后由澳大利亚资助的实际金额合计为 431 万澳元。

尽管由于项目设计的局限性（综述如后），该项目仍然显著地加强了日喀则市为农村贫困人口提供初级卫生保健服务和健康教育的能力。澳大利亚项目管理承包人（AMC）在技术方面的优势，特别是在初级卫生保健和健康促进方面，为项目的成功作出了显著贡献。本项目计划建立 54 套新的农村供水系统的目标也已实现。但是，受过项目培训的人员调离或退休，运行和维护费用缺乏，都可能降低这些供水系统的长期效益。

项目评估

2001 年 10 月和 11 月，由澳大利亚和中国专家组成的联合工作小组对该项目进行了评估。评估小组的目标是评价该项目的适宜性、效果、效率、作用和可持续性，并确定可指导今后在西藏开展卫生和供水项目的经验教训。

评估过程包括同澳发署官员、澳大利亚项目承包管理工作小组、中国政府和日喀则市的合作人员、卫生人员和供水工作人员、非政府组织、社区领导和其他社区成员的广泛咨询讨论。在野外现场，评估小组考察评价了 17 个乡镇和村级卫生机构、以及 19 个农村供水系统[1]。

项目设计与实施

该项目的设计包括 4 个领域：初级卫生保健、农村供水、健康教育、项目管理。

日喀则市各农村乡镇的常住居民是本项目的主要目标人群。次要目标人群包括村级和乡级卫生人员、社区领导、以及市级卫生局和水利局的人员。

---

[1] 其中 16 套供水系统由本项目所建设。

澳大利亚项目管理承包人包括澳大利亚红十字会、与其协作的麦克法兰.巴内特医学研究中心、ANUTECH 和瑞士红十字会。合作方的实施机构包括日喀则市政府（负责项目管理）、日喀则市卫生局、市医院和防疫站（负责初级卫生保健和健康促进），以及日喀则市水利局（负责农村供水）。

该项目所确定的目标（改善健康和家庭供水）符合日喀则市农村乡镇的需求，而在本项目之前，当地对基本卫生服务和清洁饮水的可及性是很差的。

尽管该项目被称为“试点”项目，它既包括卫生领域，又包括供水领域，使其设计变得更为复杂。项目的酝酿期较长（从 1991 年到 1997 年晚期），其间涉及多次现场考察团，并数次修改项目设计。尽管如此，项目的最终设计仍然不太明确清晰，特别是对当地合作伙伴的实施能力估计过高，而对项目管理小组的要求估计过低。

曾经有碍于本项目顺利实施的其他附加因素包括：

- 主要的合作伙伴不熟悉开发合作的工作机制，而他们的物质与人力资源能力又没有经过验证；
- 本项目在西藏的冬天中期（1997 年 12 月）启动实施，但是那时不可能进行水源的基线调查，不能开始供水系统的设计和施工建设，也无法进行可以指导项目卫生领域的结构性社会研究；
- 大多数的目标人群所生活的村庄，在一年中的某些时候是无法到达的；
- 项目的设计文本直到项目实施的第一年，还没有翻译成中文，导致各方对各自的角色和职责不明确；
- 项目设计文本所允许的启动阶段[2]太短，不足以设立项目管理办公室，开展基线调查并起草第一年的项目工作计划；
- 过于强调澳大利亚项目管理承包人的产出，对于一个试点项目来说，可能要求太高。

尽管澳大利亚项目管理承包人是第一次实施技术合作项目，其成绩是很突出的，并很好地适应了当地的环境。该项目按照预定时间完成，并控制在项目的预算之内（同意延期之后的预算为 431 万澳元）。

项目目标的实现情况

领域 1 – 初级卫生保健

本项目改善了初级卫生保健的质量和覆盖面，加强了日喀则市为农村贫困人口提供初级卫生保健服务的能力。主要的成就包括：

- 新建或改建、并装备了 8 个农村乡镇卫生院[3] 和 82 个村级诊所[4]。
- 为 35 名村医提供了基础培训 (19 名男性和 16 名女性); 为 94 名村医 (75 名男性[5], 19 名女性)、36 名乡卫生院人员(5 名男性, 31 female) 和 4 名市医院医疗专科人员提供了进修

[2] 项目设计文本中定为 10 周，项目结束报告中提及 6 周。

[3] 其中 2 个为中方所建。

[4] 其中 22 个为中方所建。

或加强培训，并培养了 10 名培训师资人员 (6 名男性, 4 名女性)。

- 许多乡级和村级的卫生机构利用提高。
- 改善了市新医院和防疫站（作为本项目的一部分，由中国政府出资建设）的诊断和治疗设施，并保证为农村社区转诊的病人随时提供服务。
- 开发了高质量的培训教材和临床参考手册，并采用了藏语、汉语和英语三种文字。这些教材已经被西藏的其他项目所采用。

也有一些领域，项目的预定产出没有完全实现。乡村两级各卫生机构的建筑标准各不相同；凡是有社区参与建设的卫生机构建筑，同完全由建筑商承包建设的机构相比，质量都高一些，村民具有更强的拥有感。

在乡级和村级，疫苗的冷链系统仍然是很脆弱的－在项目地区，麻疹病例的爆发和散发仍在继续。

在开发合作活动中，对合作方政府政策的变化作出反映是很重要的；但是，该项目同政府卫生政策和规划层次的接触很有限。在本项目的中期，政府开始建立农村合作医疗制度，同时由于采用竞争性招标程序，使价格低廉的药品供应增加，使本项目的产出对乡级和村级卫生人员在基本药物目录、合理开药和用药行为方面的影响受到一定的限制。

对本项目所建设的供水系统的水质检测工作没有继续进行。

领域 2 – 农村供水

该项目在农村供水方面的主要成绩包括：

- 通过在 54 个农村社区建设管道供水系统，改善水质和供水量。
- 在社区供水系统的建设中，引入参与式设计和施工程序。
- 在市级水利局建立技术能力。
- 为村级供水管理委员会提供了培训和设备。

项目最初计划在两年中建设 54 套供水系统的目标过于宏大。项目延期允许从两年延长到 3 年零 9 个月，增加了澳发署的资金投入，用于包括实现该目标所需要的技术援助。

如同卫生诊所的建设一样，社区的参与同单纯依赖承包商所建设的供水系统相比，可以取得更好的建筑质量，更具有拥有感。

领域 3 – 健康教育

本项目加强了日喀则市卫生局在改善健康教育和环境卫生教育服务方面的能力，并对农村社区居民更好地理解关键性的卫生预防活动产生了重要影响。主要成绩包括：

- 开展了有关知识、态度、做法和行为方面的基线调查和随访研究；
- 开发了有关卫生、母亲安全和儿童保健内容、在文化方面适宜的、并用图示清楚表达的健康促进材料。

---

[5] 其中 10 人将在 2 年内退休。

- 培训了 298 名（其中 201 名女性）社区卫生教育者，还培训了 380 名（253 名为女性）母亲安全方面的师资。

如同临床培训材料一样，本项目所开发的健康促进资料已经被在西藏工作的其他组织所采用。

原来计划培养 240 名社区人员从事儿童保健工作（计划在项目完成后实施），由于市卫生局缺乏资金而未能继续进行。

目标人群受益情况

在本项目实施期间，日喀则市的农村居民对临床和预防性服务的可及性几乎提高了一倍，即从 1998 年的 47%提高到 2000 年的 83%。社区群众有了具备更好技能的卫生人员，可提供健康促进、儿童疾病管理、一般性医疗诊断、急救和注射等服务。

本项目评估小组所考察的村庄中，大约有 40%村子的居民认为药品供应取得了显著改进，主要得益于本项目以及开展合作医疗（二者被认为在普遍性地改善卫生服务方面是相互关联的）。

妇女作为卫生人员和培训师资（并作为村级水管会成员），其参与程度的提高可望为安全母亲作出贡献。乡级卫生院的报告表明，住院分娩人数几乎增加了 3 倍，同时在家中分娩并由村医或乡级助产士接生的情况，相应地出现下降趋势[6]。

能够从村级供水系统中受益的内容包括：卫生条件的改善、并且大量地节省了取水的时间和辛劳。市级的卫生信息系统的完善程度，还不足以反映健康状况是否也得到了改善。在已经建立新的供水系统的村，村民们报告说腹泻、肝炎、皮肤疾病和眼睛感染的发病率都有所降低。本项目还发现农村居民的腰部疼痛是一种常见疾病，因此开发和建筑了自来水的背水台，以便使村民取水时，不必弯腰就可以把水背上肩，从而减少腰肌张力。

通过参与供水系统的修建，以及为村级供水管理委员会成员提供培训，村民们掌握了维护和延长供水系统的基本技能，并有能力帮助其他村庄修建供水系统。由于取水的家庭成员现在有更多的时间从事生产，而且可以有水用于浇灌家庭菜地，村民增加收入的潜力也得到了改善。

从本项目健康教育活动中的受益体现在同健康有关的知识、态度和行为的改变，特别是在寻求卫生服务的行为、安全母亲、母乳喂养、环境卫生和儿童腹泻的管理等方面。但是，母亲们在给婴儿喂养不适当或者有害辅食方面的比例，并没有多少改变。

可持续性

基层卫生服务方面的受益，在不需要或很少需要基础设施支持的领域，例如卫生人员在临床诊断和治疗方面的改进，村级在儿童保健、婴儿营养和安全母亲等方面的健康促进等，将会持续很长一段时间。在凡是有村级和乡级领导对健康促进活动给予有力支持的地方，这些活动的影响也将持续下去。对健康产出的主要威胁是在项目结束时，突然减少对社区健康促进活动和卫生人员培训的经费支持。恢复卫生局对卫生人员培训和对其他社区成员的健康教育的支持，对于防止这些活动效益的损失来说是必不可少的。

---

[6] 为每一位在乡镇卫生院分娩的母亲补助 100 元人民币作为鼓励，可能影响了住院分娩的人数。

对供水和卫生服务可及性的改善，将有助于社区维持卫生的环境和行为，特别是在社区成员同这些干预活动效益有密切联系的村庄，情况更是如此。

社区强烈的拥有感、适宜而简单的技术，已帮助村级供水管理委员会能够自己完成大部分的维护和修理工作。几乎所有的村级供水管理委员会都有足够的资金购买零配件。不利于可持续性的因素包括：遗失供水系统的设计图、遗失维修工具、不知道在日喀则市仍然存有大量可供使用的零配件、以及不了解在恶劣的气候环境下，某些供水系统的构件（如水厢盖）会很快老化损坏。

市级水利局工作人员的调动或退休，缺乏经费和交通工具，对供水系统产出的可持续性构成了威胁，特别是水利局帮助村级供水管理委员会纠正供水系统出现问题的能力，也是至关重要的，因为村级供水管理委员会没有能力修复这些故障。

整个中国的卫生改革进展很快。由于本项目在市级开展，地区和自治区级的参与程度有限，本项目所取得的成就在卫生政策出现重大变化的情况下，仍将显得很脆弱。由于在政府高层缺乏正式的参与，也限制了本项目所取得的某些优异的成绩和产出通过政府渠道得到扩散和推广（例如健康教育和培训材料）。

对未来项目的意义

获得的关键性教训，对未来在西藏地区开展卫生和供水项目有重要借鉴意义的内容包括：

1. 项目的设计文本必须充分考虑澳发署指导原则的要求，并借鉴澳发署项目质量保证小组关于项目设计共同弱点的建议。
2. 在项目启动之前，应当将项目设计文本翻译成合作伙伴的语言。
3. 将澳大利亚项目组长的角色同某个技术领域的管理专家的角色合并起来，可能是项目中的一个经济误区，如果技术和管理活动的高峰期重合时更是如此。此外，如果一个项目涉及到一个以上的部门，则项目组长的行政管理任务会大幅度增加。在这种情况下，指望项目组长同时对某个项目领域提供具体而详细的技术督导，是更加不切实际的。
4. 项目启动的时机必须慎重考虑，因为在一年中的某些时间段，有些项目活动由于宗教或文化性的节假日或者不利的气候条件，是完全不可能开展的。
5. 在没有经过项目试验的环境下，必须认真评估合作伙伴的能力，允许更长时间的启动准备，以便协助项目规划、评估基线状况、明确各方的作用和职责、以及建立合作程序。为取得所要求的产出而计划开展的培训活动，应当在项目设计阶段或延长的启动准备期内进行仔细的评估。为合作伙伴机构举行专题讲习班，解释项目的开发目标和策略，可以尽量减少误解各自作用、责任和项目实施策略的风险。
6. 即便项目的主要合作伙伴是市县级当局，促使省级（自治区级）和地区级政府的参与仍然可以使项目为政策开发作出贡献，帮助项目预测和适应政策环境的变化。
7. 当卫生政策的变化可能影响项目实施的时候，在项目设计中应当包括一个卫生政策、规划和筹资的领域（包括加强卫生信息系统）。
8. 积极地同其他援助机构以及国际非政府组织合作，可以扩大项目的地域影响并提高项目效果的可持续性。

9. 社区参与（加上足够的技术支持），而不是使用合同承包商，应当作为小型建筑工程的首选方案。
10. 即使项目鼓励乡村社区成员的自力更生，项目的效益也不太可能在援助机构撤出后继续维持下去，除非已经建立制度化的能力来保证这些效益的维持。这可能需要某些专项资金支付日常费用，需要合作方政府在制定援助机构撤出的财务策略中持续而积极地参与。

CHAPTER 1 BACKGROUND

1.1 Introduction

The AusAID-assisted Tibet Primary Health Care and Water Supply Project was a response to requests from the Government of the People's Republic of China for poverty alleviation activities in the Tibet Autonomous Region (TAR). The Project was sited in Shigatse Municipality to pilot simple inputs to improve rural health and rural drinking water supply and was implemented by the Australian Red Cross, the MacFarlane Burnet Centre for Medical Research, ANUTECH, and the Swiss Red Cross. Counterpart implementing agencies included the Shigatse Municipal Government for project management; the Shigatse City Health Bureau, and the City Hospital and Epidemic Prevention Centre (CHEPC) for primary health care (PHC) and health education; and the Shigatse City[8] Water Resources Bureau (WRB) for rural water supply (RWS).

1.2 Formulation and design

In 1991, AusAID received requests from the provincial authorities of Tibet, Qinghai, Sichuan and Jiangxi for assistance to reduce poverty in those regions. In May 1992 a project identification mission assessed these requests. Based on the findings of that mission, a Pre-feasibility Study Team assessed the viability of the activities proposed for Tibet. The proposed project was large and complex with many components spread across two counties. The appraisal suggested that there was too great a risk with such an approach; a particular risk was that authorities in the TAR were inexperienced with bilateral foreign aid projects. A Project Design Mission in September 1996 scoped a pilot primary health care project and a pilot water supply and sanitation project. An AusAID field appraisal/review mission in May 1997 clarified a number of technical issues and produced the Project Design. Following AusAID's contracting procedures the contractors commenced the Project on 15 December 1997.

1.3 Objectives and scope at design

The goal of the Project was to strengthen and support the GOPRC's capacity to deliver health services and supply water to the rural villages of Shigatse Municipality.

The Project purpose was to improve householder's access to, and utilisation of, health care services and water. The Project had four components:

COMPONENT 1 — PRIMARY HEALTH CARE

Objective: To provide technical assistance to improve the quality and coverage of the Primary Health Care services in rural villages and townships of Shigatse Municipality.

8 Often referred to in the text as the Municipal WRB.

COMPONENT 2 — VILLAGE WATER SUPPLY

Objective: To improve household access to water supply in 54 rural villages.

COMPONENT 3 — HEALTH EDUCATION

Objective: To provide technical assistance to strengthen the capacity of the Shigatse Public Health Bureau to improve the health and environmental health education services for the people within Shigatse Municipality.

COMPONENT 4 — PROJECT MANAGEMENT

Objective: To manage the Project so that objectives are achieved within agreed budgets and schedules, and all monitoring and reporting commitments are met.

The Summary Logical Framework for the project is at Appendix I.

1.4 Completion

The Project underwent a 'Mid-Term' Review 15 months after inception. Following this there was an extension of the time to be taken to complete a reduced number of 44 water supply systems (WSSs).

The primary health care and health education components of the Project, and 44 WSSs, were completed by 14 December 2000. A short extension was approved to enable the completion of the remaining 10 WSSs by September 2001.

1.5 Financing

The Australian contribution to the Project was originally estimated to be A$3,000,000. The initial contract for approximately A$2.8 million was increased to A$4.05 million following the Mid-Term Review in 1999. A Goods and Services Tax variation was required in July 2000, while a final amendment in March 2001 allowed for the construction of all 54 water supply systems. The final contract amount was for approximately A$4.34 million. Final expenditure was A$4.31 million.

The GOPRC contribution cannot be verified but is in the order of 9.8 million RMB. To this could be added approximately 3.5 million RMB for the construction of a new City Hospital and Epidemic Prevention Centre.

1.6 Evaluation

An 'end of project' evaluation was undertaken in October/November 2001 by an evaluation team that included members from China and Australia.

Briefly, the objectives of the evaluation were to assess the relevance, effectiveness, efficiency, impact and sustainability of the Tibet Primary Health Care and Water Supply Project (The Terms of Reference are at Appendix II).

The evaluation built on the extensive evaluative material produced by the Project. Prior to travelling to Tibet, the evaluation team members studied the Project Design Document (PDD), the report of the Mid-Term Review (MTR; March 1999), the Project Completion Report and other key Project documents and reports on file at AusAID or with the AMC. Australian Team members also met, or held discussions by teleconference, with:

- Staff of the AusAID North Asia Section in Canberra, and
- The Australian Project Directors, Team Leader and Water Supply Engineer.

In Lhasa, the Team met representatives of:

- The Foreign Economy Administration Division, Department of Foreign Trade and Economic Cooperation (DOFTEC),
- The Regional Public Health and Water Resources Bureaux,
- Tibet Red Cross, and
- International non-government organisations (iNGOs) that had worked collaboratively with or in similar areas to the Project – World Concern, Save the Children Fund (UK) and Médecins sans Frontières (Belgium).

In Shigatse, the Team met with representatives of:

- The Shigatse Municipal Government,
- The Municipal and Prefecture Health Bureaux and the City Health and Epidemic Prevention Centre (CHEPC), and were given a detailed tour of the new City Hospital,
- The Municipal and Shigatse Prefecture Water Resources Bureaux,
- Swiss Red Cross, and
- Shigatse Prefecture Professional Training School.

The Team members travelled to 8 rural townships of Shigatse Municipality to inspect health facilities and village WSSs constructed by the Project, and to interview health staff, water management committees, community leaders, All China Women's Federation representatives, farmers and other community members. In total, the Team assessed 8 township clinics, 9 village clinics, 16 rural WSSs constructed under the Project, and three rural WSSs built independently by the Municipal WRB (See Appendices V and VI for the Team itinerary and people met.)

In each interview the Team addressed a pre-set list of questions to collect required information.

It was expected that, based on lessons learned from the Project, the evaluation would offer insights into effective methods to design and implement aid projects (particularly health and water supply projects) in the harsh climate and resource poor communities which characterise Tibet.

CHAPTER 2 PROJECT OBJECTIVES AND DESIGN

In October 1981, Australia became the first Western bilateral aid donor to the People's Republic of China. Since that time, PRC has been a major partner in Australian development cooperation.

2.1 Appropriateness of objectives

2.1.1 AUSTRALIA'S EXPERTISE

Australia's development cooperation program has provided high quality assistance with the development of health infrastructure and capacity in developing countries in Asia and the Pacific for many years. It has also assisted with implementation of rural water systems, including small and large piped gravity fed water supplies, particularly in rural Indonesia. Mechanisms for community consultation and the promotion of participation, ownership and self-reliance have been developed over this period.

At the time the Tibet Project was designed, Australia's development cooperation program with China aimed to improve human resource development and to assist in reducing poverty, including through interventions in health and water supply. There was a geographic focus on the inland and remote provinces of China.

2.1.2 NEEDS

In the same period, the GOPRC had a program aimed at reducing poverty in Tibet which, health indicators suggested, was significantly poorer than all other regions in China. Primary health care was not well developed, with only one out of 71 rural counties having met the national criteria for primary health care. Access to well serviced health facilities in rural areas was poor.

There was also a paucity of community water supply systems in rural villages, with many villagers relying on polluted surface ponds and other water sources of dubious quality, often located far from their homes.

Therefore, a project targeting the rural poor in the Shigatse Municipality in the TAR, and which aimed to:

- Improve health delivery at three levels, by upgrading infrastructure and capacity (human resource development) at the village, township and city level;
- Improve water supply, by providing infrastructure, training and resources for maintaining and performing simple repairs on WSSs at the village level, building capacity at the Water Resources Bureau and leaving a large inventory of spare parts; and
- Develop an ongoing capacity to provide health education to health workers and villagers;

was consistent with the policies of both Australia and China. It was considered that Australian skills in these areas were transferable to the TAR. Both governments endorsed the Project.

The needs of the primary target population, Tibetan villagers, were reflected in the Project's aims. Prior to the Project, many villagers in the target area did not have ready access to good basic health care for themselves or their children. For example, infant and maternal mortality rates were high[9] and, due to doubts about the capacity of available health services to improve the birth outcome, babies were often delivered at home. Improved health services were a major requirement.

Secondary target groups, such as village and township health workers, community leaders (e.g. teachers, All China Women's Federation representatives) and government officials in the health and water supply sectors, would benefit from training provided by the Project in PHC, health promotion and management of RWSs.

In the Shigatse region of the TAR, the dry season can last 7 to 8 months. Year round, the **quality** of readily available water is often poor, with implications for water-borne disease. During the dry season, the **quantity** of water is also a problem. One or more members of a household (usually women or children) can spend substantial parts of their day collecting water for drinking and cooking. There is often little water left for bathing, laundering, growing vegetables or providing for the needs of stock. In these conditions the provision of reliable, readily accessible, and adequate supplies of water in villages is a priority.

Given the poor baseline conditions, improvements in PHC and drinking water supply in villages and townships had the greatest potential to improve the welfare of the rural population, especially if coupled with community education.

2.1.3 TARGETS

The Project Design had clear, measurable physical targets, with 80 village clinics to be built to local minimum standards, 2 township clinics to be constructed and 8 upgraded to local minimum standards, and 54 drinking water systems to be installed. All the township and village clinics were to be equipped. With GOPRC funding, a new Shigatse City Hospital and Epidemic Prevention Centre would be constructed, facilitating more horizontal integration of clinical services with the Epidemic Prevention Service (EPS). Capacity building of health workers at all levels, and the development of health education services was not as readily measurable, although proxies such as the number of courses and the number of people trained could be monitored.

9 Health figures reported in the PDD stated that in the TAR as a whole there was an Infant Mortality Rate of 110 per 1,000 live births in 1990 (compared to 52 nationally), an Under-5 Mortality Rate of 127 per thousand (64 nationally), a Maternal Mortality Rate of 893 per 10,000 (compared to 95 nationally) in 1990. Elsewhere in the PDD Government figures were reported to show that in Shigatse Municipality overall MMR and IMR were much closer to the national averages, although these would be expected to be much higher in rural than urban areas. The Project's Baseline Survey (1998) estimated MMR at 136.9 per 10,000 live births (95%CI: 27.8–244) and IMR as 69 per thousand (95%CI: 44–107) but noted the difficulty gaining accurate infant or maternal mortality information. It was considered that the figures underestimated IMR by a significant degree. The survey also found a moderately high incidence of diarrhoeal disease (3.7 episodes annually in children less than 5 years of age), high prevalence of wasting in children under 2 years of age (16% [95%CI: 7.6–29.7] for children 1–11months, and 18% [95% CI: 8.3–34.9] for children 13–23 months), and a very high prevalence of stunting of children under 5 (47.1% [95% CI: 39.5–54.8]), with the highest prevalence in children over 12 months of age.

2.1.4 CONSTRAINTS

For several reasons, the physical and infrastructure targets were too ambitious:

- The Australian Managing Contractor (AMC) was implementing its first contracted technical cooperation project;
- The main counterparts (Shigatse Municipality government and related agencies) had never been involved in this type of activity before and were uncertain of the development cooperation mechanisms involved in the Project;
- The counterparts' capacity (physical and human resources) was untested;
- The climate was harsh; and
- Villages and townships were difficult to access at the best of times, and frequently impossible to access during the rainy season or the middle of winter.

The need to work in three languages (Chinese, English and Tibetan), with poor translation and interpretation facilities, compounded the difficulties.

One important aspect of the project design was that the Project was designated a 'pilot' and, as such, was expected to provide an improved design model for future projects. Therefore, the Project was based at the municipal level, where it could most directly work with intended beneficiaries in the townships and villages.

2.2 Adequacy of the design process

The gestation period for the Project, from 1991 until late 1997, was long by AusAID standards. This at least partly reflected the difficulty of obtaining accurate and complete information required for the development of a 'good' project design, particularly considering the difficult physical and institutional environment in which the project was to be implemented.

During this period, a number of teams spent time in the TAR, to hold discussions with stakeholders and counterparts at the regional and national level, and in the Shigatse Municipality and rural townships. For example, the September/October 1996 Design Team spent around two weeks in Shigatse, with another two weeks involved in discussions and meetings at the regional and national levels. The two weeks in Shigatse included 6 days of field visits to 12 villages. The appraisal/review mission spent a further period in the TAR.

Overall, the processes leading to the Final Design were comprehensive, to the extent that they could be. Considerable general baseline data were collected and assembled by the different teams, and various approaches and designs were apparently contemplated. However, the Project Design Document does not discuss the options considered leading up to the selection of the final design, apart from stating that the option chosen was 'close to that originally proposed by Shigatse City.' The evaluation team gained the impression that the production of the final PDD was rushed, with little clarity about how the design progressed from earlier models to the final design. The Team is uncertain whether some important information was either misinterpreted (e.g. responsibilities and inter-relationships among water supply bodies) or not collected at all.

The designation of the Project as a 'pilot' was a sound decision. It was expected that the pace of implementation (of WSS activities in particular), would be 'balanced between the need to provide as much benefit as possible and the need to develop an appropriately participatory process, the limitations of labour availability, climatic restrictions ... '. This would provide a base from which to learn more about the difficulties of implementing projects in the TAR and reduced the risk of implementing community activities in an unsustainable or inappropriate manner. The difficult climatic, physical and institutional conditions in which the Project was to be implemented made it impossible to accurately assess all risks.

2.3 Standard of design

2.3.1 COMPONENTS

The logical framework for the Project comprised four apparently straightforward components (PHC, water supply, health education and project management), and was relatively concise, clear and logical.

A sanitation component was not included as this would have added complexity, and it was felt that health education would probably change Tibetan sanitary habits to reduce their disease risk. Furthermore, although there were shortcomings in environmental hygiene, most households had an adequately enclosed, elevated 'drop' toilet that they cleaned out twice yearly to fertilise their field crops.

2.3.2 FEASIBILITY

In an easier geographic and administrative environment, all of the Project objectives may have been realistic and achievable. However, the original design directed that 20 water supply systems were to be implemented in the first year, and this was not feasible under the prevailing conditions[10]. The Mid Term Review found that achievement of the PDD goals would have required substantially more GOA inputs than assumed in the PDD. The main problem was that the capacity of the Municipal WRB counterparts had been overestimated, and where they had used contractors these built an inferior product (See *Standard of Outputs 4.2.2*). The MTR recommended a re-adjustment of the number of WSSs to be built at an achievable rate (44 over three years).

The MTR also discovered that, due to the terminology in the PDD and MOU, there was a misunderstanding of the amount of equipment that the Australian side would contribute to the refurbishment of the CHEPC.

During implementation, the AMC found that 'the paucity of previous experience in Shigatse of international project management, primary health care projects or rural drinking water implementation, meant that the designed inception period was far too short. ... baseline information gathering was required to continue for 9 to 18 months, in tandem with implementation'. (See *Timelines of preparation and implementation 3.1*)

10 The Water Supply Status Report (April 1998), the first major output of the Water Supply component of the Project, confirmed the PDD rate of implementation as being feasible, but it paid little attention to counterpart capacity. Only 11 systems were completed in the first year.

The PDD also suffered from other minor shortcomings: in that little care was taken with the preparation of Appendices to the Annex on Working Papers[11], the terms 'prefecture' and 'province' were used almost interchangeably, several acronyms were used without definition (e.g. MOFTEC, COFTEC) and it was not clear how the working papers in Annex 2 informed the Project design (as there was little cross-referencing).

The Partner Government endorsed the institutional and organisational arrangements set out in the design. However, there appears to have been confusion on the part of the PDD about the roles and responsibilities within the water sector. The PDD identified the City 'Water Services Bureau' as the counterpart, but the authors may not have realised that there were two separate agencies: the Water Resources Bureau (which eventually became the counterpart for implementing the rural water supplies, although its main responsibility is irrigation), and the Water Supply Company, which provides water to urban users, was not part of the Project, but was where the AMC had its offices in rented accommodation.

This confusion may have led to the ongoing concern about water quality testing. The PDD states that: 'The Shigatse Municipal Water Services Bureau undertakes regular testing for urban drinking water ... and the Water Services Bureau has agreed to undertake this (Project) testing and are able to provide the staff, equipment and reagents'. The counterpart, the WRB, has never had the capacity to test water, whereas the Water Supply Company does have laboratories.

The PDD also did not allocate resources to the training of Water Management Committees (WMCs), or their provision with basic tools and spare parts – essential components of community ownership, management and maintenance of water supply systems. This oversight was corrected by the MTR.

In addition, there was poor definition of whether or not the GOPRC would provide a Chinese water supply engineer. There is no such position included in the list of GOPRC inputs (Section 3.4.2 of the PDD), yet Output 2.4 requires the Chinese water supply engineer to oversee construction of systems!

The PDD was also not specific on the supervision of construction standards for village and township clinics. GOA inputs were to include 'construction materials ... and equipment for health facilities', while GOPRC inputs were listed as 'local building materials and construction labour (supplied by villages)', without specifying who would actually oversee and be responsible for standards of construction of health facilities.

Overall, the evaluation team believes that the inclusion of components addressing multiple sectors (in this case Health and Water Supply) was ambitious for a pilot project with a small management team. The TAR was an untried environment where counterparts had limited understanding and experience of development cooperation activities. The Project Team Leader had to shoulder heavy administrative demands; to also provide detailed day-to-day management of the two health components of the Project (Components 1 and 3) required him to absorb an excessive work load.

Finally, the PDD does discuss the 'recurrent cost implications' of the Project. It was clear that, by the time of the evaluation, most of the recurrent costs were not being met.

11 Appendices 1 & 2 of Annex 2 to the PDD provide Municipality data under the Prefecture heading and vice versa.

CHAPTER 3 PROJECT MANAGEMENT

3.1 Timeliness of preparation and implementation

As discussed earlier, there was a long gestation between identification and final Project Design. When the Design had been finalised and the contractors selected, there was considerable haste in moving the Project Team into the field. It was mobilised in mid-December 1997, the beginning of the Tibetan winter and just prior to the commencement of an extended holiday season for counterpart agencies; this possible timing constraint had been documented in the PDD but went unheeded. At this time of year it was extremely difficult to begin WSS design and construction, and implementation of baseline water surveys and formative social research (for the health education component) was constrained.

The Australian Managing Contractors faced a number of additional difficulties:

- While implementation arrangements were endorsed at senior GOPRC levels, the actual counterparts were unable to read the Project Design Document until 9 months into the Project, due to the lack of translation capacity[12]. Consequently, the broad nature of bilateral technical cooperation processes, and the specific roles and responsibilities of each partner in this Project, remained unclear for approximately the first year. The counterparts had expectations of infrastructure, equipment and direct budgetary support, which were not immediately fulfilled, and they did not at first appreciate the value or need for capacity building. This caused some initial problems.
- Only 10[13] weeks were allocated for the inception of the Project. The AMC soon realised that this was too little time to undertake the many tasks necessary to establish the Project in a new environment such as Shigatse: setting up the Project office, preparing a monitoring and evaluation framework, undertaking needs assessments and community consultations, conducting extensive baseline health and water supply surveys, and drafting the first annual work plan. In fact, the Water Supply Status Report was not finalised until April 1998, the study of health knowledge, attitudes, practices and beliefs (KAPB) in September[14], and the Baseline Household Survey in December 1998.
- The capacity of counterpart staff, particularly in the Water Resources Bureau, had been greatly overestimated.
- The project had to work in three languages, and initially the interpreting and translation skills available needed improvement.

The initial Project Coordinating Committee (PCC) meetings were required to sort out these many early misunderstandings. While it was a trying experience for the AMC, the MTR

12 Responsibility for translation lay with the GOPRC. However, as it lacked the capacity the translation was organised by the Australian Project.

13 See Footnote 3.

14 Damien Morgan (September 1998) *Knowledge, attitudes, practices and beliefs of the people in the villages of Shigatse Municipality, and proposed health education interventions.*

ultimately played an essential role in solving ongoing implementation issues, including setting an achievable target for water supply systems, extending the timeframe (with additional resources), and settling the Australian contribution to re-equipping of the CHEPC.

Despite these difficulties, the project's achievements were considerable (See *Chapter 4 Achievement of objectives*). Other donors, mainly iNGOs, working in Tibet were impressed at the progress made by the Project Team, particularly with the baseline research and the development of health materials with broad applicability and relevance. They noted that the Project Team appeared to be driven by the milestones they were required to achieve, while the iNGOs worked at a less frenetic pace.

3.2 Standards of contract and performance by contractor

3.2.1 IMPLEMENTATION PERFORMANCE

Following the initial PCCs and particularly the MTR, the implementation problems were well managed and the AMC completed the project within the revised timeframe (with a later extension so that all 54 WSSs could be constructed) and within budget. The only output that could not be satisfactorily implemented during the Project was the water quality testing program (Output 1.7) as a counterpart input. The final PCC discussed this issue and it was resolved that the facilities of the Prefecture Epidemic Prevention Centre would meet the City Government's commitment to a regular program of testing for the WSSs.

The third community educator training course on child health, which was to be implemented after the departure of the Australian Project Team, was not held. (This is discussed in *4.3.1 Achievement of objectives* under *Component 3 – Health Promotion*).

3.2.2 CONTRACT

The contract between the Commonwealth of Australia and the AMC was primarily an 'outputs' contract, which required reports as evidence that specific outputs had been achieved; payments were attached to the acceptance by AusAID of these reports. Fifty-one such milestones were to be achieved during the Project. This type of contract has been criticised as focussing contractors' attention on the production of the reports, rather than on the achievement of the actual outputs. Fewer and more meaningful milestones would be appropriate, especially for pilot projects in difficult environments. As much emphasis should be placed on identifying and testing culturally appropriate and sustainable processes as on producing physical outputs.

3.2.3 RESOURCES

While the AMC managed to meet the milestones, this was not without some stress, as the Project Team was under resourced, in that the ATL was also the leader of the Primary Health Care component. He had both administrative and technical responsibilities, both of which were heavy at times. While implementation did not suffer, it was at the cost of an excessive workload on this individual. Additional administrative, or technical, support as the situation required, would have been appropriate.

Following the MTR, the addition of a Construction Supervisor, the training of WRB technical staff, and increased use of community labour in constructions, of both village clinics and WSSs, improved the quality of infrastructure. At all times, through specialist inputs and the technical depth of consortium members, the AMC had access to world best practice to implement the health side of the Project.

3.2.4 MONITORING & EVALUATION

The Project had a Monitoring and Evaluation Framework, which was drawn up at the end of the effective inception period, and was largely followed thereafter. Follow-up monitoring and evaluation activities included a household survey, a comprehensive health facility survey, a revised WSS monitoring process, a qualitative KAPB study and participatory assessments from Project partners. Since Tibet was virgin territory for activities such as those of the Project, the AMC gathered data continuously; rather than relying on official records it preferred its own direct data collections (See also *Health Information System* in *4.1.2 Standards of outputs*). There was no plan for coordinated monitoring of Project outcomes after the completion of the Project.

3.2.5 CAPACITY BUILDING

There was significant training, including on-the-job training, of technical counterparts at all levels. The Project produced trainers' manuals, trainee handbooks and other resources. For example, the technicians of the WRB received such training while heading up the construction teams for the WSSs. In addition, each of the villages which received a WSS also received training in its operation and maintenance, a toolbox with essential tools and spare parts, and an O & M manual in Tibetan.

For capacity building in health, the Project applied innovative methods such as the use of role-play for PHC and health promotion training, and clinical models and foam rubber dummies for other clinical training (e.g. safe motherhood and delivery). Ongoing reference to clinical manuals and other Project reference materials in village and township health centres testifies to their usefulness to participants. The Project also trained doctors from the CHEPC to continue to provide training and on-the-job support for township and village health staff.

The full extent of the AMC's achievements, and the extent to which the Project's objectives were met are summarised and discussed in Chapter 4.

3.3 Strength of partner government support and value of dialogue in country

The Project was designed as a 'pilot', and it appeared appropriate to establish it in the Shigatse Municipality, which is effectively a county in the Shigatse Prefecture. Shigatse is the Prefecture's main (only) city and the second largest city in Tibet. At this level it received good support due to the status of its senior counterparts, who were Vice-Mayors in the Shigatse Municipal Government, and senior officials in the Water Resources Bureau, the City Health Bureau and the CHEPC.

However, at this level of engagement, the Project felt the effects of the limited funds available to the Municipal Government. While a functional office and staff were provided, there were difficulties with standards of accommodation for the Australian team, a general lack of vehicles until Project vehicles arrived, limited English language skills among the office staff, difficulty working in three languages and a lower than expected capacity among locally engaged staff.

While this created difficulties at one level, difficulties were also caused by the lack of **formal** links to the prefecture and regional levels of government. Without formal[15] links the Project could not engage with regional policy makers, or bring to their attention important project outputs and achievements, such as the production of international quality health learning materials specifically tailored for Tibet. Central policy has a strong influence on local implementation and future projects would benefit from strong formal linkages to regional policy makers. In this project it was found that there was little flow of information from Municipality up to Prefecture, and Prefecture up to Regional level government.

These difficulties aside, the AMC had productive working relationships with counterparts, to the extent that this was possible with the language difficulties. There was also excellent communication between the Project, other donors and iNGOs active elsewhere in Tibet. This dialogue facilitated the dissemination and adoption of Project training materials, technical standards and health promotion resources beyond Shigatse Municipality.

There were also useful interactions between the counterparts and the Australian Embassy through the PCC mechanism, which helped to resolve some major initial problems, and dealt with other less serious matters as the Project proceeded.

3.4 AusAID management and use of resources

According to the AMC:

> *'In general, AusAID has demonstrated overall support and flexibility in the implementation of the Project. This has been demonstrated by three contract amendments providing for significantly more resources than originally allocated. Project reviews provided useful extra technical resources to the Project and the recommendations of reviews were largely accepted by AusAID. AusAID has approved modifications and additions to the original Project design, including the hepatitis B & E and lower back pain surveys and the adaptation of IMCI [the World Health Organization's Integrated Management of Childhood Illness training materials and protocols], with minimal difficulty. Support from the Post in Beijing has been consistent and reporting requirements reasonable.' (Project Completion Report 2001)*

While there were several changes of the Australia-based officers responsible for the Project at the Beijing Embassy, the relevant locally engaged staff member was constant throughout.

15 The Australian Team Leader worked hard to establish strong informal links, but the evaluation team was advised that formal links are necessary to effect any change in policy or practice at a senior level.

'Likewise, the desk officer in Canberra has been consistently supportive, within the normal strictures of contractual arrangements, implementation constraints have been recognised, and praise for Project achievements promptly communicated.'

Despite the difficulty of access, AusAID desk and posted staff were able to familiarise themselves with the Project through field visits. An understanding of the physical, administrative and policy environment and difficulties in implementation, enabled them to deal appropriately with requested changes. AusAID desk and posted staff provided comments and discussed all strategic documents such as Annual Plans, and some milestone reports with Project staff. Many milestone and all baseline reports were assessed by AusAID sector specialists in Health, Infrastructure and Gender and amended if required. The AusAID desk sought additional specialist advice on the water supply component twice: for an in-country review in 2000 and to appraise the draft Water Supply Manual in 2001.

Risk management appears to have been well handled within the Project by consultation among the ATL, Australian Red Cross and Project Director.

CHAPTER 4 ACHIEVEMENT OF OBJECTIVES

4.1 Component 1 — Primary Health Care

4.1.1 ACHIEVEMENT OF OBJECTIVES

INFRASTRUCTURE

In general, the Project has improved the quality of primary health care services to the target population and achieved its planned outputs, particularly in the area of infrastructure development and support (Output 1.2).

Eight rural township clinics have been built (or rebuilt) and equipped — 6 with Government of Australia (GOA) funding through the Project, and two by the Government of the People's Republic of China (GOPRC).

Eighty-two village clinics have also been constructed — 60 by GOA and 22 by GOPRC — and each equipped by the Project with essential diagnostic materials (thermometers, scales, stethoscopes and sphygmomanometers) and a high altitude pressure steriliser for re-usable instruments and syringes. Most of these clinics are in villages where there was previously no village doctor or clinic building, or where the incumbent village doctor worked from home.

Each township clinic was provided with a Chinese 2-wheel tractor and trailer, for transporting patients and conveying the township doctor to neighbouring villages to support the village doctors and conduct health promotion and child vaccination activities. The Project also provided 80 of the 82 villages where a clinic was constructed with a bicycle for the village doctor to use for clinical and health promotion outreach activities (Output 1.6).

A new Shigatse City Hospital and Epidemic Prevention Centre has been constructed with GOPRC funding, allowing the City Hospital to move out of the Prefecture Maternal and Child Health Hospital where it was previously co-located. Salaries and other running costs for the CHEPC were included in the GOPRC contribution to the Project. Australian Project funding provided an X-ray machine, bench-top haematology and biochemistry analysers for the laboratory, and other clinical diagnostic equipment for the hospital. Hospital management has a policy of continued access to these facilities, free of charge, for patients referred from the rural townships (Output 1.6).

The Project also provided seed funding for a revolving stock of 28 essential drugs in the City Hospital pharmacy, also with guaranteed access for patients from rural townships.

TECHNICAL CAPACITY

The Project made significant progress towards the achievement of its objective to develop technical capacity for the provision of improved PHC (Output 1.4).

During the first Project year, key health managers from the Shigatse Municipal Health Bureau undertook a study tour of relevant health projects in Nepal (Output 1.1). Participants learnt about participatory methods for program planning and adult learning, functional

Figure 1. 'Back happy' tap stands (Photographs courtesy of Dr Liu Yunguo [top], and Dr Chris Morgan [bottom]).

stratification of health worker training, and prioritisation of action on HIV/AIDS education and prevention.

Refresher training was provided for 36 township doctors and midwives (5 male and 31 female) and 94 village doctors (75 male, of whom 10 were due to retire within two years, and 19 female). Concurrently, four medical specialists from the Shigatse City Hospital undertook refresher training through clinical attachments in Lhasa (Output 1.3), including specialties in surgery, child health and radiology. Ten doctors and other health workers were trained in the development and implementation of township and village health worker training and refresher programs, and accumulated experience in training lower level health staff and community members.

Because there were no training materials suited to the rural Tibetan context, the Project developed its own range of trilingual training materials and clinical reference manuals for use in the City Hospital training centre. Topics included safe motherhood, IMCI, rational drug use, safe injection and emergency first aid.

In collaboration with the Shigatse Prefecture Professional Training School, the Project also developed a 3-month curriculum for the basic training of 35 newly recruited village doctors (19 male and 16 female) to help staff the newly constructed village health facilities and replace retiring staff. Swiss Red Cross and the Training School continue to use parts of this curriculum in two of the three health worker training programs currently conducted at the School.

The Project was also responsive to previously undocumented health problems in the community (i.e. lower back pain and hepatitis B), which were identified in the baseline health surveys.

Management of lower back pain was included in clinical training, and the high prevalence of this symptom prompted incorporation of a 'back-happy' water container loading platform into the design of Project tap stands (See *4.2 Component 2 — Rural Water Supply*, and Figure 1).

A seroepidemiological survey of the prevalence of markers of hepatitis B infection was conducted, and recommendations made for three strategic interventions:

- Early vaccination of the newborn against hepatitis B;
- Incorporation of subsequent vaccine doses into the standard immunisation program; and
- Continuing the Project's work on reducing the number, and increasing the safety, of injections given by health workers.

4.1.2 STANDARD OF OUTPUTS

TRAINING MATERIALS

The development of clinical curricula and training materials for township and village health staff (Output 1.4) are among the Project's highest quality outputs. Content is accessible, relevant, clearly illustrated with (usually) line drawings and has been carefully translated into Chinese and appropriate written forms of Tibetan.

> *'[The training materials are] easy to understand, easy to remember, and easy to use.' — Village doctor (Bian Xiong township).*

The Project-developed clinical training and reference manuals continue to be used widely in township and village clinics, and all but two of the 16 health staff interviewed by the Team could easily describe key elements of the reference materials (safe motherhood, IMCI) that they used on an almost daily basis. Project materials have also been adopted by iNGOs active in PHC and clinical training elsewhere in Tibet.

Unfortunately, training and refresher courses for township and village health staff have not been maintained since the end of the Project, due to a lack of recurrent funding (See *5.4 Maintenance of recurrent funding*).

CONSTRUCTION

The standard of construction of township and village clinics (Output 1.2) varies widely. The most common construction defects are leaking roofs, cracks, and a failure of the external cement render to adhere to the underlying mud brick. Some clinics have needed repeated repairs, either by the contractor or by the villagers themselves.

Community involvement in clinic construction achieved better building quality and a greater sense of ownership than clinics built by contractors. In one village, the evaluation team was told that a contractor had promised to pay community members in return for them providing labour to build their clinic, but this money did not materialise.

In the 9 village clinic buildings assessed during the evaluation, village doctors and community members were asked what they would do if the clinic needed additional repairs. For the three clinics built by village builders using traditional techniques and local materials, the likelihood of the villagers themselves taking responsibility for maintenance and repairs was greater (all said that they would initiate repairs themselves). Four of the 6 contractor-built structures are falling into disrepair: in each case, villagers have already undertaken minor repairs and improvements, but are uncertain of the correct avenues to initiate repairs of significant structural cracking or replacing the roofs now that major leaks have appeared.

TRANSPORT

All township medical staff interviewed appreciate and use the tractors provided by the Project (Output 1.6), especially for village visits. However, lack of recurrent funding for registration and maintenance has limited their usefulness in transporting patients to Shigatse.

Bicycles provided by the Project were of a standard Chinese urban design. In only two of the 9 village health facilities reviewed by the evaluation team were the bicycles still functional (one of these was in a village where the doctor was continuing to use his own bicycle and holding the Project bicycle 'in reserve').

ESSENTIAL DRUGS

Major health policy developments in Shigatse Municipality have overtaken Project training on essential drugs and rational prescribing. The Cooperative Medical Schemes (CMS) and a process for purchase of pharmaceuticals by competitive tender were introduced midway through the Project, resulting in the availability of a wide range of low cost pharmaceuticals at many clinics. There are minimal restrictions on who may now order and prescribe any of more than 200 drugs on the Municipal Health Bureau tender list (the only requirement is that the prescriber be a trained village or township health worker). This placed some pressure on the Project's essential drugs approach, which concentrated on a core list of 28 drugs for the management of common illnesses.

The Project's manual on the use of essential drugs was present in only two of the 9 village clinics assessed by the evaluation team, and only one staff member in the 8 township clinics visited (a part-time midwife) could produce a copy of the manual. Dispensing practices do not appear to have been strongly influenced by Project outputs on essential drugs and rational prescribing, and the Team noted continued adventitious use of intravenous infusions. At least stock-outs of medicines on the essential drug list are now rare.

The Project could have been more responsive to these changes, but was limited by a lack of engagement at the health policy and planning level. Further discussion of the CMS and its impact on the health sector in Shigatse Municipality is included in Appendix IV.

COLD CHAIN

The vaccine cold chain (Outputs 1.4, 1.5) is particularly fragile at the township and village level, where few health workers have a clear understanding of the importance of rigorous cold chain maintenance. Shortcomings observed by the Team include transportation of vaccines from Shigatse Municipal EPS in ice boxes cooled only with river water, and delays moving vaccines to the villages from township clinics with no electricity, refrigeration, or other means of safely storing vaccines for more than a few hours.

While storage of vaccines at the City EPS is probably satisfactory, documentation of refrigerator temperatures is erratic.

The MTR recorded concerns about the vaccine cold chain and recommended 'urgent attention at all levels' by the Project. Although training inputs in cold chain management were recorded in the Project Completion Report, the only evidence of any Project intervention

found by the evaluation team was a UNICEF-style vaccine transport ice box in each township clinic visited. Neither the City EPS nor clinic staff interviewed by the evaluation team had heard of WHO- or UNICEF-style cold chain monitors.

The evaluation team noted that outbreaks and sporadic cases of measles occur in the Project area. Fortunately, there is no evidence of re-emergence of wild poliomyelitis as a public health problem.

HEALTH INFORMATION SYSTEM

To guide health system policy development, planning and evaluation, adequate and timely information is needed on:

- health outcome indices (e.g. life expectancy, disease-specific incidence rates, cause-specific mortality);
- health system performance (appropriateness, effectiveness, efficiency, responsiveness, accessibility, safety, continuity, sustainability and capability); and
- population level determinants of health (e.g. socio-economic status, wealth distribution, health service utilisation).

Although the Project health information system (HIS) was adequate for monitoring Project inputs and outputs, it was implemented in parallel with Municipal Health Bureau systems. The evaluation team noted that village and township doctors are generally aware of their 'upward' reporting responsibilities, and the Epidemic Prevention Service at CHEPC confirms that reporting compliance is generally good. Some township clinics attempt simple data collation in charts and tables fixed to consulting room or office walls. However, the range and quality of data are barely adequate to inform health policy development, planning and evaluation, and township health staff report that the style of analysis and presentation is unchanged since before the Project.

There is little evidence that the Municipal level HIS has been strengthened by the Project, and collection, collation and analysis of data is still performed manually (although the HIS manager was attending a course in computerisation of health data during the week of the field evaluation). It was not possible to objectively measure Project impact on morbidity and mortality indices, or to confirm villagers' perceptions of the health benefits of new WSSs, using the Municipal HIS.

4.1.3 EXTENT OF BENEFITS TO TARGET POPULATION

INDIVIDUAL AND COMMUNITY BENEFITS

Villagers/community members (especially the rural poor) were the principal target population of the Project. They now have improved access to clinical and preventive health services. Almost twice as many households now have access to a village health worker, than shown by the baseline survey conducted in the spring of 1998 (83% vs. 47% respectively). Ninety-seven percent of households are within one hour's walk of a health facility.

A follow-up survey of 300 households towards the end of the Project, and the evaluation team's own inquiries, showed that there has been increased utilisation of many township and

village clinics. Rural communities also enjoy a more skilled health work force as a result of Project training, with greater skills in health promotion, management of childhood illness, pregnancy, general medical consultations, first aid, and safer injection practices.

Approximately 40% of villages visited by the Team cited improved drug supply as a broad benefit from the Project and the introduction of CMS (the two being seen as related aspects of a general improvement in health services). Only two villages visited said they had ongoing drug supply problems and in one of these, Nadang (population 900), this may have been attributable to the villager not implementing a CMS (See Appendix IV).

GENDER

In consultation with counterparts and course participants, the Project's Gender Strategy informed its training inputs and resulted in increased female participation in the rural health workforce. Four of ten Project health trainers were women, and two of the four City Hospital doctors who were sponsored for additional training in Lhasa were female (a paediatrician and an obstetrician). By the time of completion of Project training activities, the number of female village health staff had increased from 3 in 1998 (just over 5% of the Municipality's village health workforce) to 19 (20%) in 2000. This proportion was expected to increase to 23% with the imminent retirement of 10 older male health workers. By Project's end, 31 of 36 township health staff (86%) were women.

Baseline studies indicated a preference by women for female birth attendants. The shift in the gender composition of the rural work force is therefore expected to contribute to the Project's goal of improved capacity to deliver health services that support safe motherhood (in particular, management of labour and delivery).

The 8 township clinics visited by the Team report an approximate trebling in the number of clinic deliveries, and a downward trend of similar magnitude in home births being attended by a village doctor or township midwife. Municipality policy is to offer a 100 RMB incentive payment, plus free management of delivery and postnatal care, to women who elect to have their confinement in the township clinic. About half of the clinic staff (but very few community members) cited this financial incentive as a factor in the increased proportion of births taking place in township clinics.

Unattended births still occur, possibly as often as before the Project. However, community attitudes to giving birth in the township clinics are long-standing, and are unlikely to change completely during and following a three-year pilot project (See *4.3 Component 3 — Health Promotion*).

HEALTH WORKERS

One of the target populations for this Project component was health service providers and planners. Although only 3 of the 7 participants of the health study tour to Nepal are currently working in health service administration in the Municipality, these individuals occupy key positions in management and training and will continue to benefit from exposure to alternative approaches that such tours provide. However, this was the only Project input in

health policy and planning, and a lack of continuity was noted as major policy shifts (e.g. the introduction of CMS) occurred at the Regional level. The limitations associated with this are discussed below (*5.2.1 Health benefits*).

All health staff at hospital, township and village level interviewed by the Team stated that the Project's training had enabled them to practise a better standard of health care.

The introduction of IMCI to the Municipality is a particular credit to the Project. With the assistance of WHO, China has just concluded a pilot implementation of IMCI in five provinces. Tibet was not included in the second phase (expansion to other provinces), for which the first workshop was held in Beijing during the AusAID evaluation, on 24 October 2001. However, in future, Shigatse health trainers trained in IMCI by the Project may be able to assist in the introduction of IMCI to other counties in Tibet.

Tuberculosis (TB) is the third most common notifiable disease in Tibet. Treatment of TB is the responsibility of the Shigatse Prefecture Epidemic Prevention Service. Village doctors in the Project area are not currently involved in the supervision of TB patients who receive up to six month's treatment for self-administration at home[16]. The network of village doctors trained and supported by the Project presents an opportunity to consider implementation of the World Health Organization's Directly Observed Treatment – Short Course regimen for tuberculosis.

WATER QUALITY

During the Project, the GOA paid for initial testing of water quality of all water sources before they were accepted for use, although this was nominally a Chinese responsibility. Baseline chemical testing of proposed water sources is essential, and the tests identified two sources with low levels of arsenic. Water from Project WSSs has not been tested since Project completion, despite a resolution at the final PCC meeting that the City Government was committed to a regular program of water quality testing, using laboratory facilities at the Shigatse Prefecture Epidemic Prevention Centre. There is also a GOPRC requirement that biological tests are conducted on all community water supplies once per year, but this is also not being met.

The Team was not as concerned about regular follow up tests, particularly biological tests, as it was about initial chemical testing, and had some doubts about its value, due to:

- The difficulty of collecting and transporting water samples properly;
- The difficulty of taking action if an unsatisfactory result is returned;
- The current unhygienic collection and storage practices of some householders; and
- The common practice of boiling all drinking water before use.

Moreover, the Project found the local water quality testing to be of doubtful reliability for a variety of reasons (listed in the Project Water Supply Manual). The value of this Project output remains doubtful.

16 Numerous studies have shown a low compliance rate for patients self-administering TB treatment over a six month period. One result can be the development of multi-drug resistant strains of TB.

4.2 Component 2 — Rural Water Supply

4.2.1 ACHIEVEMENT OF OBJECTIVES

INFRASTRUCTURE

The Project improved household access to water in 54 rural villages through the construction of gravity-fed piped water supplies which provided water at communal tap stands (Outputs 2.4, 2.8). This was the only water supply objective documented in the PDD.

As noted earlier, resource constraints meant that it was not possible to produce 54 operating water supply systems within the initial two-year time frame. With additional Australian technical assistance, local funds and an extension of the time frame by one year and nine months (in two stages), the Project eventually met the target number of water systems.

TECHNICAL CAPACITY OF VILLAGERS

Apart from constructing the WSSs, the Project also developed the capacity of villagers to be self-reliant in the operation and maintenance (O&M) of their systems. Essential elements in developing this self-reliance included: functioning village Water Management Committee, training, resources to undertake repairs, and funds to purchase replacement components (See Appendix VII).

Village Water Management Committees existed at all sites visited by the Team. At about half of the sites the Committee did not meet on a regular basis. In many communities, the Committees' operation appeared to depend on the strength of one person, who motivated and directed WMC activities. Often this was the village leader but, in at least one case, it was the village doctor and, in 2 other cases it was a monk. All these individuals had received Project training in operation and maintenance of systems.

The village leader was a member of 10 WMCs and the vice-leader a member of 2. Every Committee except one had at least one woman member but in no case were women in the majority. The median number of Committee members was about 4 (more in large systems, less in smaller ones).

Maintenance funds had been established in all but three of the villages visited. Residents in one of these villages without funds said that they were too poor to contribute anything, while residents of the other two villages indicated that a meeting was to be held soon to establish a fund and collection mechanisms. Funds were held in local banks (8 cases), by the WMC (1 case) and in one case the Committee had lent the money to a local businessperson and was receiving interest. Three villages were not asked about their O&M fund.

Several Committees have purchased small items (mainly taps, paint etc.) and one Committee has purchased cement to repair its tap stands. There appears to be a reluctance to spend the money in the bank. Several committees indicated that they collect extra to make specific purchases of materials for repairs.

The amount currently held by the committees varied between zero (1 village) to 1020 RMB. Average figures were 100–300 RMB.

Tool kit boxes were located in all visited villages. Most were in the care of the village head, the vice head, the village doctor or a monk. Most toolboxes were unlocked and without a padlock. The contents varied considerably. A few contained only 4–5 of the original 22 items, but boxes in recently completed schemes were almost complete. In some cases the toolbox contents have become a general village resource.

The **operation and maintenance guide** was located in almost all cases. In some cases it was in the toolbox and, in others, it was in a cupboard in the house of the village leader. At every village visited except one, there was at least one Water Committee member who claimed to know the contents of the manual and who felt confident that they or the committee could undertake necessary operations and maintenance activities. Several committees indicated that they were visiting the source on a regular basis, cleaning the sedimentation tank and reservoir, and carrying out other routine maintenance.

System folders were located in most cases, but the contents varied considerably. Some villages claimed not to have been given a folder and had some of the normal folder contents in a bag. Many folders appeared to be incomplete. Of most concern was the frequent lack of design information and a construction plan. For schemes constructed in 1998/99 few of the folders that were examined contained this information.

TECHNICAL CAPACITY OF WATER RESOURCES BUREAU STAFF

As mentioned earlier in this report, the capacity of WRB staff was overestimated in the PDD. To enable the Project to meet its objectives in water supply, the capacity of WRB technical staff was upgraded to the point where they could supervise the teams of villagers building the water supply systems, under the direction of the Construction Supervisor. A total of 17 courses, workshops and study tours on aspects of the provision of water supply were conducted during the course of the Project for WRB staff. Topics included community consultation and participation, construction techniques, operation and maintenance, planning, design and supervision/management. In the first year, most courses were formal instruction; later, the emphasis was more on on-the-job training. The technicians felt the on-the-job training was more effective than classroom tuition.

4.2.2 STANDARD OF OUTPUTS

PRE-PROJECT CONSTRUCTION

For a 'before and after' comparison of technical capacity, the Team visited two schemes that were implemented by the Municipal Water Resources Bureau prior to the start of the Project. These schemes were designed and constructed by contractors in 1993.

One of these schemes effectively ceased to function in 1998 because of: a design fault with the reservoir (it was not elevated enough to provide adequate water pressure); the use of inferior materials; insufficient flow from the source; and a failure of water to flow in winter due to freezing of the pipes. During the Team's inspection, a small flow was coming from the delivery pipe, the concrete reservoir was being by-passed, and a few people were still using water at one point in the system. The system appeared to have been poorly designed, and poorly constructed. It has since been replaced with a Project-built water supply.

The second scheme suffered similar design and materials faults. The system continues to operate at partial capacity, with water being supplied at low pressure to one standpipe within the town compound. It is unlikely that this system can be effectively renovated.

A third Municipal WRB scheme was visited. This was designed and constructed in 1998/99 by personnel with some project experience. The Municipality provided the necessary funds. The most obvious problem is the lack of a proper overflow system – at present, overflow water cascades down a path. Apart from this, the scheme appears to operate satisfactorily except for two months in the winter when it freezes.

CONTRACTORS

The PDD assumption, that construction of systems would be carried out by villagers supervised by counterpart technicians, was initially impossible to achieve as the WRB technical staff did not have the prerequisite skills in concrete and masonry construction. To overcome this skill shortage, the Municipal WRB let contracts for the construction of early schemes to independent contractors. The Team understands that very tight contracts were negotiated, quality control was poor, corners were cut and construction standards were low.

The Project undertook remedial work on some WSSs constructed by contractors. Some tap stands were completely rebuilt and improvements made to reservoirs. Chinese taps (iron) were replaced by better, heavier-duty taps (brass) made in Nepal. These were supplied as standard on the later systems and are clearly superior in construction and are operating much better in the field. They are also clearly favoured by villagers. Village WMCs have also carried out some work on tap stands to rectify poor construction by contractors.

Contractor work was phased out around mid-1999 when additional Australian resources (supervisory staff, vehicle, training) recommended by the MTR were provided to the water supply program.

LATER PROJECT CONSTRUCTION

The evaluation compared systems constructed in year 1 with those constructed later in the Project (by villagers under the supervision and direction of trained WRB and Australian Project staff). The overall general level of construction varies from 'just acceptable' (all systems constructed in 1998/99, plus some others) to 'reasonable'. Most concrete structures have bulk walls made from stone with concrete added to the mix or applied as a thick render on the surface. With the exception of suspended slabs, formwork rarely appears to have been used. Drainage from tap stands often flows to an existing nearby ditch through the village; however, where tap stands were built on flat ground, there is often some pooling of water near the stand. Drainage pipes were short and easily blocked, and gravel-filled drainage pits were not part of the design.

In some locations inspected by the Team, some standard items were missing from structures (e.g. step irons from a 2001 reservoir, and drainage from some of the earlier tap stands), and there was deterioration of the rendered tap stand surfaces.

There is clear evidence of improvement in design and aboveground construction during the life of the Project. This is most evident in the design and construction of tap stands. Several designs were used but the 'back-happy' standpipe appears to be the most popular. Some of the early tap stands were rebuilt to a higher than original standard later in the Project (as noted above). However, further repairs are required on some early systems, with some villagers explicitly requesting the improved tap stands.

It was impossible for the Team to assess the quality of below ground construction, except at reservoirs. Reservoir construction appeared to be of fairly uniform quality. The Team was told of pipe breaks in several of the early schemes – these may have been caused by poor original construction quality (although there is no evidence of major changes in trenching, pipe laying or backfilling techniques over the course of the Project.). Each village built its water system independently, so there was no opportunity for them to gain comparative experience in construction techniques. After specific training from the Australian Construction Supervisor in 1999/2000, the WRB technicians should have been able to ensure that major pipe construction problems were avoided on later systems. The three technicians interviewed by the Team who had worked on the Project believed that construction quality was better on later schemes. Simple design improvements, such as marking the location of pipe joints by large painted stones, were carried out on some later schemes.

The poor quality of hatch covers and padlocks is a problem. Many hatch covers have already rusted from their hinges and some are totally unusable. Many padlocks have become unusable and been removed. The Team anticipates that, before long, many covers on reservoirs, valve boxes and winter tap stands will be gone. The open hatches will then become a public hazard, with risks ranging from fouling of reservoirs by animals, to people falling and injuring themselves, to a child drowning.

4.2.3 EXTENT OF BENEFITS TO TARGET POPULATION.

Of the 16 Project WSSs which the Team visited (See Appendix VII), 14 were providing water as intended, one appeared to be partially blocked, so that only 2 out of 6 tap stands were providing water, and one was completely 'dry'.

INDIVIDUAL AND COMMUNITY BENEFITS

In all villages visited, many villagers identified time savings as the major benefit of their WSS. In Tibet, women, children and the elderly bear much of the responsibility for water collection. By bringing a reliable water source (tap stand) closer to end users, the time involved in collecting water is much reduced.

Improved water quality was also mentioned at a number of sites.

Reduction in labour was also identified as a benefit at six of the sites inspected. Water is often collected in containers strapped to the back. When filled, the containers are difficult to lift onto the back and then carry. The placement of WSS tap stands in villages has greatly reduced the distances that water must be carried, and the "back-happy" tap stands (Figure 1) make lifting and loading much easier.

Villagers often cited better hygiene practices as another benefit of the new WSSs. Many consumers claimed to be washing their hands, bodies and clothes more frequently than before (information volunteered by people in 8 villages, and confirmed in another three when specifically asked).

Health workers in all 9 villages and 8 township clinics also claimed that better hygiene was a clear benefit of the new WSSs. However, the evaluation team noted that there were still a lot of children and adults with dirty faces, and random questioning about face washing suggested that less than 20% of children (and a slightly higher proportion of adults) had washed their faces on the day of the village visit. The Team acknowledges that the evaluation was conducted during the 'busy' season, when community members were intensively engaged in agricultural activities with little opportunity to attend to personal or environmental hygiene. The observed level of cleanliness may simply be a result of time pressures, and the low priority of washing relative to the urgency of processing grain before the onset of winter (See also *4.3.2 Standard of outputs*).

> *'Before, we were like animals, drinking water from the stream.'*
> *— Village doctor (Bian Xiong township).*

A more direct link between better quality and accessibility of water and better health outcomes was difficult to establish, and may only be revealed by longitudinal studies once the Municipality HIS has been strengthened. Only some villagers established a connection between water supply and health status, but all health workers in villages with Project WSSs identified a reduction in the incidence of diarrhoeal illness as a clear benefit. Township health staff were also convinced of a sharp reduction in diarrhoeal illness in villages with Project WSSs, although data collections were generally not sophisticated enough to demonstrate this trend objectively. Other health benefits cited by individual health workers included reductions in the incidence of hepatitis, skin sores, eye infections, and upper respiratory tract infections.

However, due to the short drainage pipes, water pools around some tap stands. Soiling of these pools of water with animal faeces presents a potential public health hazard.

Villagers also developed skills through their involvement in water supply construction. This ranged from learning simple excavation and backfilling methods, to acquiring more specialised skills such as joining HDPE pipe and stone/concrete masonry construction. Selected villagers (always including members of the Water Management Committees) were given additional training in operation and maintenance activities and these skills are recognised by many as a personal benefit.

The participatory processes adopted by the AMC for planning and implementation were well received by villagers at every site visited. Many commented that this was the first time they had been involved in such a process and they felt it contributed greatly to the success of the water supply system. This has undoubtedly helped the potential sustainability of WSSs. A few villagers commented that this process had brought the village closer together and helped reinforce traditional attitudes to community participation. Some villages had adopted a system of one person per family being involved in the participatory process and this

generally appeared to be the family head, so some meetings would have comprised mainly men. Women in these villages were asked if they were happy with the system design and location of tap stands and all agreed that they were satisfied. Other villages had tried to achieve a good mix between men and women.

Of the estimated 150 villagers spoken to, none expressed opposition to the idea that they should pay something towards the operation and maintenance of 'their' water supply scheme. Many felt there was community benefit in having a village-owned water supply system.

WATER RESOURCES BUREAU

To assess the extent of benefits to Municipal Water Resources Bureau staff, the Team interviewed the Chinese water engineer, the former Deputy Director, and three Project technicians. All were very pleased with the training received under the Project. All agreed with the participatory process used in village water supply design. However, none of these five individuals still works for the Municipal WRB.

As most Municipal WRB staff are men, so Project training favoured men. It is not clear if an attempt was made to change the gender balance of training participants. During the November 1999–November 2000 period of training, the Project trained 18 men but only 3 women.

As mentioned above, many of the technicians, the Vice-Director and the Chinese water engineer, who received training or developed some expertise, have now left the Municipal Water Resources Bureau and are working in areas other than village water supply. Even those remaining with the Municipal WRB have little opportunity to use many of the skills learned through the Project. Their current focus is on irrigation and building gabion walls to direct floodwaters away from villages.

The final beneficiary of the Project should have been the Municipal Water Resources Bureau itself. Retirements and transfers of Municipal WRB officers with Project experience has left only limited knowledge of Project activities and few people with Project-trained skills.

Accommodation and resource shortcomings were observed at the 2-room office that the Municipal WRB occupied in the Municipal Government offices on the Team's arrival.

While the Team was in Shigatse, the Municipal WRB moved to new purpose-built offices. These provide more space and better facilities, but the WRB still lacks systems for record keeping, storage of documents, and management of stores.

The current WRB staff was not familiar with Project documents. While the Team eventually located some individual system documents and the water supply manual in a cupboard, they were unable to find any 'as-built' plans of systems. It can only be assumed that construction was carried out accurately, according to design sketch plans.

Project-purchased materials (about 30 km of various diameter pipe, valves, taps, flanges etc.) are still housed in the Water Supply Company warehouse, but will be moved once the new WRB compound is completed. These materials will fill almost all of the available space in the new warehouse. A list of materials handed over by the Project could not be located at the

Municipal WRB office, but the Team was told that the 'Director will know'. This could not be confirmed. These stores are intended for the use of villages which wish to repair or possibly extend their systems but, at present, few villagers know of their existence. Without a functional stores record keeping system, the WRB will have difficulty satisfying requests for replacement parts.

4.3 Component 3 — Health Promotion

4.3.1 ACHIEVEMENT OF OBJECTIVES

Through its health promotion activities, the Project had a significant impact on the understanding by rural communities of key preventive health actions, not only in Shigatse Municipality but more widely in other areas of Tibet.

In 1998, the Project conducted baseline formative social research in one village in each of four townships into community KAPBs about health and the factors influencing it. This research continued to inform the Project's health education program (Output 3.1).

Health promotion resources (posters, both card and cloth; Output 3.2) were developed, and proved extremely popular with health workers and community members. The emphasis of these materials was on hygiene, safe motherhood and child health.

In collaboration with the CHEPC, the Project developed and conducted training of trainer activities for doctors and other CHEPC staff, and training for village doctors, community leaders, All China Women's Federation (ACWF) representatives and other community members in how to use the health promotion materials (Output 3.2).

A final round of Project health promotion activities, comprising a program of education in child health for 240 community members at the village level, was planned for early 2001 shortly after completion of the community health components of the Project. This was not completed. The reason cited to the evaluation team was a lack of funding from the Public Health Bureau to carry out the activity.

4.3.2 STANDARD OF OUTPUTS

Health promotion resources and training materials for health staff and community members (Outputs 3.1, 3.2) are also some of the Project's highest quality outputs. Great care was taken to ensure that health promotion messages were culturally sensitive, consistent with baseline social research, and used clear illustrations and appropriate written forms of the Tibetan language.

One key to the success and penetration of this Project activity was the strong interest, commitment and support for health promotion demonstrated by one of the Vice-Directors of the CHEPC. Another factor was the strong support of village and township leaders for health promotion activities conducted by village doctors and other community members (e.g. ACWF delegates).

A comment in the 'Methodology' of the baseline KAPB survey proposed that, to maximise the Project's intended benefits, a stronger engagement in formative social research would be desirable. This was not possible due to time pressures inherent in the Project design and implementation schedule.

> *'We don't have so many time pressures ... we do things more slowly' [than the AusAID Project] 'but hopefully also more thoroughly.' — iNGO Project Manager.*

However, the methods used in the survey do not seem to have compromised the overall standards or relevance of the Project's health promotion outputs. Like the clinical training resources, the health education materials have been adopted enthusiastically by iNGOs active in health promotion elsewhere in Tibet.

Without exception, all township and village doctors consulted during the evaluation reported continuing use of Project health promotion resources, either informally as an adjunct to patient education during consultation, or for more formal community education activities. At least some of the posters were displayed on the walls of each of the 17 township and village clinics visited by the evaluation team. All VHWs interviewed could correctly and accurately explain the purpose of a random selection of posters displayed.

All clinics tended to have the posters fixed on the wall above eye level, where they appeared to be more a decoration for the consulting room than an aid to patient education. Rather than using the cloth posters as a portable resource that could be carried to other villages in a bag or pocket, doctors tended to fix them to the walls of the clinic alongside the more conventional card posters. Only three of eight village doctors questioned about the cloth posters reported using them as a portable resource, as intended. An interesting innovation was to hang the cloth posters from the central beam of the consulting room, much like Tibetan Buddhist prayer flags.

Unfortunately, not all village level health staff are aware of their status as health promotion role models for their communities. Good personal hygiene and keeping clinics tidy and swept clean maintains an example consistent with the messages delivered in health promotion activities. As with other people interviewed by the evaluation team during this very busy time of the year, many village health workers were obviously spending long hours in the fields and had little opportunity for assiduous attention to cleanliness of the clinic or personal hygiene.

4.3.3 EXTENT OF BENEFITS TO TARGET POPULATION

The major benefits from this component of the Project to communities came from changes in health-related knowledge, attitudes and practices. In particular, the Project's follow-up household survey documented high levels of recall of education about safe motherhood (85%) and hygiene (60%). Other benefits cited by respondents were provision of a new health facility (84%), a new water system (72%), better technical skills among health workers (32%), improved hygiene knowledge and practices among community members (15%), and improved availability of drugs and/or health services (12%).

Improved knowledge about health among community members and community leaders includes the causes and home management of childhood diarrhoea (e.g. using home-made oral rehydration solution), indications for seeking assistance from the health worker, better hygiene practices, and understanding which pregnancy complications need urgent help.

The mean duration of breast-feeding has increased (from 22 to 29 months). However, there has been little change during the Project in the proportion of mothers giving inappropriate or hazardous complementary feeds to infants.

In the course of community focus groups in the field, the evaluation team was able to corroborate many of these findings. For example, community members (especially mothers) could easily recall an appropriate 'recipe' for sugar-salt-water oral rehydration solution and maintained that they would give this to their infants in the event of a diarrhoeal illness. However, the Team notes comments in the Project Completion Report about a possible gap between knowledge and practice, and an absence of exposure of many women of childbearing age to Project health promotion messages. (This issue was to have been addressed in the final round of health promotion activities, which was not conducted — See *4.3.1 Achievement of objectives*).

All communities interviewed said they would present early to their village health worker in the event of illness in their family; this is supported by Project data showing increased utilisation of village and township clinics. Traditional Tibetan medicine is infrequently the treatment of first choice, although about 20% of interviewees said they would try it as an interim measure if the health worker happened to be unavailable. However, 3 of the 9 village communities visited said that further training for their health worker was a priority, to continue the improvements in their village level health service.

The Project's follow-up household survey indicates a 50% increase in the proportion of women receiving antenatal care (79% in 2000, compared with 48% in 1998), generally through the midwife at their township clinic. Project data (cross-checked by the evaluation team in consultations with township doctors and midwives) confirm an increase in attended deliveries, mostly at the township clinic. The financial incentive offered by the Municipal Government for villagers to deliver at the township clinic (see above) may have been a significant factor, but respondents also have a strong awareness of the non-financial benefits of clinic delivery.

It remains rare for women electing to deliver at home to be assisted by a midwife or health worker. However, since completion of the Project, the evaluation team was not able to elicit reports of any maternal or neonatal deaths occurring under these circumstances in any of the 9 villages or 8 township clinics visited during the evaluation. This may reflect the efficacy of increased antenatal care and the identification of high-risk pregnancies needing confinement at the township clinic or the City Hospital.

CHAPTER 5 SUSTAINABILITY OF OUTCOMES

5.1 Sustainability strategy

5.1.1 PRIMARY HEALTH CARE AND HEALTH PROMOTION

The Project's strategy for sustainability of its health outcomes was to:

- work through a close relationship with the Municipal Health Bureau and CHEPC, and
- focus on capacity building for rural health staff (competency based clinical training, and the production of simple, easy-to-use reference manuals) and other community leaders (health promotion).

5.1.2 RURAL WATER SUPPLIES

For its water supply outcomes, the Project strategy was also to focus activities at the municipal (county), township and village level. In particular, there was a strong focus on community involvement in the planning, construction, operation and maintenance of water supplies.

There was also a strategy of strong Municipal Water Resources Bureau involvement in the investigation, design and construction of systems. This ensured that government staff received training and practical experience in implementing a community-focused village water supply activity. The intent was that the WRB would have the technical capacity to implement other WSSs with their own resources.

5.2 Sustainability of 'grass root' benefits

5.2.1 HEALTH BENEFITS

Grass root benefits in health are likely to be maintained in areas that require little or no infrastructure support (e.g. improved clinical diagnosis and [possibly] rational prescribing by health workers; and village level health promotion in child health, infant nutrition and safe motherhood). These outcomes will contribute to improved health and increased productivity in rural communities, especially for women and children. To ensure that this occurs, continued maintenance of the professional standards of health staff and local community leaders, through the extension or renewal of community health promotion and clinical training activities, is crucial.

However, the abrupt curtailment of support for many of these activities on completion of the Project, threatens the sustainability of these important Project outcomes. Their resumption will depend on identification of new funding sources (See *5.4 Maintenance of recurrent funding*), which may come from new donor activity or existing revenue sources (e.g. regional budget, surpluses in CMS accounts).

Through its good links with iNGOs and other international partners, Project health training and health promotion training materials are already being replicated elsewhere in Tibet. Other areas of public health importance identified by the Project (e.g. HIV/AIDS, hepatitis B, low

back pain, infant nutrition and IMCI), have the potential to inform public health programs in the Region.

Infrastructure, such as newly constructed or renovated clinics, should be readily sustained in villages where local materials and building techniques were used and there is a strong sense of community ownership. However, structures built by urban contractors are of variable quality and often incorporate non-traditional components that are unfamiliar to community members. In such cases, villagers and health workers are uncertain about how they will attend to even minor items of maintenance and repair, now that contractual obligations have expired.

Medical equipment supplied to village and township clinics by the Project, as well as the X-ray machine in the City Hospital, all appear to be of robust design and are generally functional. However, the bench-top haematology and biochemistry analysers purchased for the City Hospital laboratory are sensitive to voltage fluctuations and have required importation of expensive replacement parts from Hong Kong. The Hospital has managed this situation by installing in-line voltage regulators and limiting use of the analysers to essential cases only.

Improved access to water supplies and health services will help to sustain community hygiene practices, particularly in those villages where community members made a clear link to the health benefits of these interventions.

While the Project strategy was to work closely with Municipal authorities, the evaluation found that the strong support of village and township leaders for health promotion activities was an additional potent factor in maintaining benefits from this component. Continued engagement between community leaders, health promotion trainers and the Municipal Health Bureau will help to strengthen the basis for this support.

The rate of health reform throughout PRC is rapid and Project achievements remain vulnerable to significant shifts in the policy environment (See Appendices III and IV). However, the Project had limited opportunities to engage with Regional and Prefectural Health Bureaus on health policy, planning and financing, even where this might have had an effect on Project activities (See discussion under *4.1.2 Standard of outputs — Essential Drugs*). Further changes in policy may be inconsistent with some of its outcomes.

5.2.2 BENEFITS RELATED TO WATER SUPPLY SYSTEMS

Communities exhibited strong ownership of the water supply schemes visited by the evaluation team. The ownership process had begun with community participation in the design and implementation of the WSSs, then the training of WMCs, and had been completed with the 'handover' of the schemes. This included written agreements on the responsibilities of the various parties to the WSSs. The employment of appropriate, simple technology, the development of Water Management Committees, their training and provision with tools, spare parts and an Operations and Maintenance Manual, gave villagers the confidence that they could do most repairs themselves on their water systems. This self-confidence has been well placed, with WMC members in a number of villages visited saying that they had repaired broken water pipes or tap stands with leaking elbows. Most communities continue to

undertake routine maintenance work (such as cleaning out reservoirs) and many have carried out minor repairs or purchased minor materials. In addition, with a few exceptions, villages had sufficient maintenance funds to purchase replacement parts for systems, if required.

On a negative note, some of the villagers do not have copies of the system designs, and certainly not plans of systems 'as constructed'. It will be difficult for the WMC to carry out any significant investigation of their system, as memories fade of where the piping lies.

Toolboxes were not always complete, and in only one village was there knowledge of the spare parts available at the WRB. Two villages could make good use of some of this material to modify their systems, and others could replace inferior Chinese taps with Nepalese ones.

More importantly, the WRB is unlikely to meet its responsibilities under the handover agreements. When villagers were asked who they would contact if they could not repair their own systems, most villagers responded 'the WRB'[17]. It was clear to the Team that the WRB no longer has a capacity to provide assistance in cases where the WMCs cannot repair system problems themselves or to provide refresher training or training for new members of WMCs (See *5.3.2 Management of water supply systems*). This already has been demonstrated on 2 occasions where requests for assistance from villages have been unanswered for 2–3 months. The WRB had no record of these requests, no transport and no funds to respond. The O & M guide provided to all villages gives two names of Municipal WRB personnel to contact and a telephone number: one of the people has left the WRB and the other was unaware that his name had been given as a contact.

With respect to sustainability of the quantity of water provided by village WSSs (ie. withdrawal/recharge), rainfall data show significant variation both within and between years. Little information could be found relating rainfall to the base flow from springs and within streams. Evidence gathered during the life of the Project simply suggests that there are large reductions in flow during the dry season.

As data on flow rates do not exist for most sources, local knowledge was used to determine the best source for WSSs. This suggested that, in some cases, yield would be insufficient to meet demand at certain times. However, there was no clear evidence shown to the Team of insufficient water at tap stands to meet normal needs.

5.3 Sustainability of improved institutional capacity

5.3.1 HEALTH SECTOR

Project development of clinical manuals in IMCI, safe motherhood and delivery, first aid and (to a lesser extent) rational drug use, are an enduring institutional resource that many health workers refer to on a daily basis. Their use has also extended beyond Shigatse Municipality, where they have been adopted by other organisations involved in capacity building for Tibetan clinical staff.

17 In a few cases the local technician or township chief would be contacted. When this answer was given it was because the person in this position had previously worked on the project and was known to the villagers.

Health promotion materials (posters, cloth charts, trainers' manuals) are also an institutional resource that has already been adopted more broadly in Tibet.

On the other hand, the transfer or retirement of Municipal officials who are familiar with, and have been trained to manage, Project-related resources and activities in both the health and water supply sectors, are serious threats to sustainability.

As in other counties of Tibet, the Municipal Government is actively promoting CMS. The strengthened infrastructure at township and village levels, the improved staff competence, the village water supply systems and the health promotion programs initiated by the Project are now contributing to the sustainable operation of CMS which, in turn, provides a basis for carrying on many outcomes of the Project.

The critical element is whether these achievements are valued highly enough for Municipal authorities to allocate funding support to them. CMS depends on good management, an adequate supply of medications and equipment, and clinical competence of health staff. Underpinning these three factors, and protecting the community and government investment in the CMS fund, is an active and effective health promotion campaign. Currently, drug supply takes precedence over the other three areas. There is also a tendency to look for renewed donor inputs[18], rather than using existing institutional capacity as a basis for continuing the work initiated during the Project.

The Project had limited opportunities for formal engagement with Regional and Prefectural Health Bureaus on health policy, planning and financing, even where this might have had an effect on Project activities. This may prove to be the single most important factor limiting the sustainability of the Project's health sector benefits at the institutional level. Prefecture and TAR health authorities were both enthusiastic about the Project's achievements, but expressed regret to the evaluation team about the limited access to information about Project activities.

Strategic engagement at the Regional and Prefectural level might also have further enhanced the Project's already good access to information about other projects and areas of planned donor activity, and facilitated dissemination of knowledge about the Project's achievements.

5.3.2 MANAGEMENT OF WATER SUPPLY SYSTEMS

A **Water Supply Implementation and Training Manual** was produced by the Project and contains much excellent information. The Manual aims to present the main processes necessary to implement village drinking water systems in Tibet. The 'final' version provided to the evaluation team was missing some sections. However, what was there was translated into English, Chinese and Tibetan. Unfortunately, current staff at the WRB were unaware of the existence of the Manual and, as mentioned elsewhere, are unlikely to build further WSSs in the near future[19].

18 A submission for external donor funding for additional health promotion activities was made immediately after the MTR and again following completion of Project health components; these applications have not yielded any additional funding.

19 The Team was told by one of the former WRB staff members that two funding proposals had been submitted for the implementation of WSSs, but no additional information or separate verification was available.

A number of people within the Municipal WRB have been trained by the Project in elements of participatory planning, design, supervision, implementation, operation and maintenance of village water supply systems. Those trained included the Municipal WRB Vice-Director, the Chinese water engineer, and up to six technicians. Also, early in the Project, a water supply study tour was made to Nepal, in which 5 or 6 Municipal WRB staff participated. Unfortunately, most of these people have now left WRB so the skills have been lost to the organisation.

As in health sector activities, the Project established few links to the Prefecture Water Resources Bureau (PWRB). There are clear links 'downwards' from the PWRB to the Municipal WRB, with jobs and funds being directed as appropriate, but information flow the other way is poor. The PWRB was only aware of Project activities through contacts with villagers on other matters. It claimed to have included community consultation processes, similar to the Project's, in all its projects for some time. The PWRB[20] is about to start a major village water supply program in 5 counties (about 90 schemes) with construction by village labour.

The PWRB appears to be a better-resourced and operated organisation than the Municipal WRB, with around 4 engineers, 12 technicians and a total of 50 staff. PWRB expressed interest in the Chinese and Tibetan versions of the Project O&M manual, and the Team arranged for copies to be provided to it. This could be used to guide projects outside Shigatse Municipality.

At the Provincial level, there appeared to be little knowledge or interest in Project activities. One representative from the Provincial WRB attended a meeting with the evaluation team in Lhasa prior to the Shigatse field visit, but admitted he did not know of the Project. Despite an invitation from DOFTEC, no representative attended the debriefing meeting at DOFTEC at the conclusion of the field evaluation.

It appears that at both the Municipal and Provincial level there is little interest in rural water supply in the Shigatse Prefecture. Only at the Prefecture level does there appear to be the capacity, the resources and the interest in implementing WSSs without external assistance.

5.4 Maintenance of recurrent funding

Lack of recurrent funding has severely limited the ability of Shigatse City Hospital to continue clinical training and refresher training for township and village health staff, and health promotion training activities for community members. Possible limitations in recurrent funding for Project training activities and clinical supervision had been partly foreseen in the Risk Analysis Matrix of the PDD, and further highlighted by the Shigatse Municipal Government at the time of the MTR[21].

20 The PWRB claims to be the agency responsible for rural water supply in the Shigatse Prefecture outside of the Shigatse Municipality.

21 The evaluation team also noted the resolution of the final meeting of the Project Coordinating Committee that a proposal for funding for ongoing training activities be submitted to Australian Red Cross, Swiss Red Cross and DOFTEC; the team has received a copy of this proposal.

The Team could find no documentary evidence that the Project worked with the Municipality to identify possible sources of funding for continuation of training activities, which should include supervisory visits by City Hospital medical staff to the township clinics. Such activity is a priority among the exit/hand-over strategies that should take place over the last 6 months of a Project, and may have been facilitated if an explicit Health Policy, Planning and Financing component had been included in the Project design.

With respect to water supply, the Team was advised that the Municipality normally provides the Municipal WRB with approximately 100,000 RMB each year. In 2001, 200,000 RMB was provided, but only to construct gabion walls for flood control. None of this money was specifically allocated to village water supply operation and maintenance[22].

The Municipal WRB also indicated that it had staff and transport problems, which curtailed its ability to respond to village Water Management Committee requests, as discussed in 5.2.2 above.

The Team believes that sustainability will be compromised if there is no capacity to respond to requests for assistance, provide training when necessary, and undertake an annual consultation with WMCs and inspection of all WSSs. These activities would require the provision of probably 2 trained staff and transport for an estimated 10 weeks per year and a budget to cover costs.

22 The PRWB told the Team that in the past it had provided funds to the Municipal WRB for specific activities. However, in future, funding will only be provided to approved proposals coming from the Municipality to the PWRB.

CHAPTER 6 CONCLUSIONS AND LESSONS FROM EXPERIENCE

6.1 Overall assessment

The objectives addressed by the Project (improved primary health care, health promotion and household water supply) were appropriate to the needs of the target populations, which were among the poorest agricultural communities in the rural townships of Shigatse Municipality. However, the technical complexity of combining both health and water supply activities in a single pilot project, shortcomings in the PDD, the timing of commencement, environmental, language and other factors, all adversely affected initial implementation, particularly of the water supply component of the Project.

However, the Project was completed on time and within budget (with agreed extensions for completion of WSS construction). Project management was reasonably effective given the difficult conditions and level of resources. The technical depth of the AMC, especially in PHC and health promotion, and the resulting high quality and range of outputs from these components, contributed strongly to the achievements of the Project.

In spite of design limitations (See *2.3 Standard of design*), the Project has significantly strengthened the capacity of the Shigatse Municipality to deliver PHC services to the rural poor. Through its health promotion activities, the Project also had a significant impact on the understanding by rural communities of key preventive health actions, not only in Shigatse Municipality but more widely in other areas of Tibet. The strong support of township and village level community leaders for health promotion activities has contributed to the sustainability of those Project outcomes.

Although the Project objective of constructing new WSSs in 54 rural communities was achieved, the transfer or retirement of trained personnel and limited resources for operations and maintenance may diminish the long-term benefits of those and other water systems. However, there were substantial benefits to most villagers with improvements in hygiene and health and saving of time in water collection. Water quality also improved. There was some evidence of improved income potential in that time was freed from water carrying, which could be used for productive work, and more available water meant that there was an opportunity to grow household vegetables.

The community participation approaches used in the planning and design of water systems were well received by villagers and encouraged self-reliance and ownership by villages.

There was excellent communication between the Project and other donors and international NGOs, which facilitated the dissemination and adoption of Project training materials and technical standards beyond Shigatse Municipality.

The Project Gender Strategy supported the role of women as health workers, trainers and members of village WMCs.

To sustain the benefits of the Project, it will be essential to upgrade Municipal Water Resources Bureau support for operations and maintenance of village water systems and

training for village water management committees, and Health Bureau support for training of health workers and education of other community members.

Due to its implementation at the Municipal level, the Project had limited opportunities for engagement with Regional and Prefectural Health Bureaus on health policy, planning and financing, even where this might have an effect on Project activities (e.g. the effect of the introduction of CMS on training in rational drug use). Strategic engagement at the Regional and Prefectural level might have enhanced the Project's already good access to information about other projects and areas of planned donor activity, and facilitated dissemination of knowledge about the Project's achievements. Engagement with the Prefecture level WRB may also have resulted in more sustainable outputs of the water supply component of the Project.

6.2 Lessons learned

- The PDD must take full account of AusGUIDE requirements, and lessons from AusAID's Quality Assurance Group on common weaknesses in design[23].
- The PDD must be translated into the language(s) of implementing partners before project commencement; this would be one of the final steps in the design process.
- The combination of the role of Australian Team Leader and specialist manager of one of the technical components of a Project may be a false economy, if peaks in technical and administrative activity coincide. Moreover, a Project design that includes activities across more than one sector will increase the administrative demands on the Team Leader. In these circumstances it is even less realistic to expect the Team Leader to also provide detailed technical supervision of a specific Project component.
- Care should be taken with the timing of project commencement, as there are periods of the year when some activities are almost impossible due to religious or cultural festivals or adverse weather conditions.
- In untried environments, careful assessment of counterpart capacity and a longer inception phase are necessary to assist project planning, the assessment of baseline conditions, and the clarification of roles, responsibilities and development cooperation processes. Likely training inputs to achieve required outputs need to be assessed at the design phase or during the extended inception phase.
- Seminars for partner organisations to explain the development objectives and approaches of a project may minimise the risk of misunderstanding of roles, responsibilities and implementation strategies.
- With adequate technical assistance to train and supervise technicians and local communities, community involvement is often preferable to the use of outside contractors for simple small-scale construction projects (e.g. rural water supplies, village clinics). Quality of construction is often higher and village 'ownership' is increased. The use only of traditional building materials will enable villages to repair damage to the structures.

23 QAG lessons on design were not available at the time of the design of this project, but should be referred to by all future project design missions.

- Similar AusAID projects in Tibet should formally engage with the existing higher level administrative structure (provincial or prefecture), even when the primary implementing partner is at the municipal or county level. This would help the project to anticipate and adapt to changes in the policy environment that may impact on project performance. Demonstration of valuable project outputs at a higher level would also be facilitated.
- Where changes in the policy environment may impact on project performance, a Health Policy, Planning and Financing component (including strengthening of health information systems) should be included in project design.
- Active collaboration with other donors and iNGOs can broaden the geographic spread and strengthen the sustainability of a project's impact.
- Even in projects that encourage self-reliance in community members in villages and townships, project benefits are unlikely to be sustainable after donor inputs cease unless there is institutional capacity available to 'backstop' the maintenance of these benefits. This may require some 'earmarked' recurrent cost funding and ongoing active engagement with partner government authorities about financial aspects of the project's exit strategy.

APPENDIX I

TIBET PRIMARY HEALTH CARE AND WATER SUPPLY PROJECT: SUMMARY LOGFRAME

Objective Level & Narrative Summary	Verifiable Indicators	Means of Verification	Assumptions
Goal:			
To strengthen and support the Government of the People's Republic of China's capacity to deliver health services and water supply to the villages of Shigatse Municipality, Tibet AR.	Increased skills of service providers Improved quality of health service delivery Increased utilisation of services at the village and township level Informed health service users Increased and ready access to water	Baseline surveys Training records Needs assessment reports Monitoring and evaluation records Shigatse City, township and village health records	Improved curative services, access to water supply and increased health knowledge will result in better health outcomes GOPRC will support the Project, including continued budgetary support GOPRC has the capacity to implement the Project The Project will reach the target groups That Reducing geographical barriers to health services will increase access and uptake Local health services have the capacity to provide the required services and the will to be involved in the Project Communities are able and willing to participate That improved health and access to water will lead to increased productivity

COMPONENT 1: PRIMARY HEALTH CARE			
Objective Level & Narrative Summary	**Verifiable Indicators**	**Means of Verification**	**Assumptions**
To provide technical assistance in order to improve the quality and coverage of the Primary Health Care services in villages and townships of Shigatse Municipality	Increased skills of service providers Improved quality of health service delivery Increased utilisation of services at the village and township level Improved quality of administration to deliver health services	Baseline surveys KAP surveys Training records Needs assessment reports Curriculum and/or content of training at township and village level Monitoring and evaluation records Training records Shigatse City, township and village health records	Improved curative services and increased health knowledge will result in better health outcomes GOPRC will support the Project, including continued budgetary support GOPRC has the capacity to implement the Project The Project will reach the target groups That Reducing barriers to health services will increase access and uptake Local health services have the capacity to provide the required services and the will to be involved in the Project Communities are able and willing to participate
Output 1.1			
Organisation and implementation of study tour to appropriate health project(s) in China	Study tour organised, conducted and evaluated with post tour workshop	Study tour evaluation report Post tour workshop	The most appropriate project/s are selected for study tour. That study tour and workshop will result in the development of improved clinical management systems
Output 1.2			
Upgrade township and village health service facilities	Suitably built/upgraded and equipped health facilities.	Project records Assessments	

Output 1.3			
Shigatse City Hospital doctors with improved capacity, and equipment, to develop and conduct health worker training	Shigatse City Hospital doctors have increased capacity to provide appropriate and targeted health worker training	Project records	Health workers released to attend training and willing to undertake training.
Output 1.4			
Township Clinic doctors, midwives and VHWs with strengthened capacity to deliver health services.	Increased skills of health practitioners	Clinic and VHW records Training course evaluations.	Township doctors, midwives & VHWs available, willing and able to put improved skills into practice for benefit of rural population.
Output 1.5			
Rationalisation of drug use and supply	Availability of appropriate drugs to health workers, with no shortages of supply	Shigatse City hospital, township and village health records	
Output 1.6			
Enhanced outreach and referral capacity of CHEPC, township clinics and VHWs	Improved quality of health service delivery.	Shigatse City hospital, township and village health records	
Output 1.7			
Implemented Water Quality Testing program for new Water Supply Systems.			

COMPONENT 2: VILLAGE WATER SUPPLY			
Objective Level & Narrative Summary	**Verifiable Indicators**	**Means of Verification**	**Assumptions**
To improve household access to water supply in 54 villages in Shigatse municipality	Water Supply Systems constructed in (54) villages Villagers and Water Resource Bureau staff trained Participatory processes for planning and implementation instituted	Construction and training reports Community agreements Water supply manual	Materials available, designs feasible, community and counterpart staff participate, appropriate supervision is provided and water supply manual is considered to be a useful document to guide planning and implementation
Output 2.1			
Water Supply status report	Status report received by AusAID		Organisations involved in WS implementation in Tibet participate
Output 2.2			
Pre-construction training program	Training program organised, conducted, evaluated and reported	Training program evaluation report accepted by AusAID	Training program is required Participants are identified and available Participants cooperate in evaluation and a suitable report is produced
Output 2.3			
Year 1 community agreements and designs on rural Water Supply Systems for 20 villages	20 village level community agreements and designs completed	Copies of WS designs and village agreements	Design and agreements reflect the requirements of both village communities and municipal government
Output 2.4			
Year 1 implementation of rural Water Supply Systems in 20 villages	Community Water Supply Systems installed in 20 villages	Construction report	Village agreements in place, designs are completed, materials available and villagers contribute labour

Output 2.5			
Year 1 program review	Evaluation report	Evaluation report received and accepted by AusAID	Year 1 program implemented and stake holders participate in review process
Output 2.6			
Water Supply Manual	Village water Supply Manual produced, translated, and utilised by appropriate users	Printed manual	Procedures and practices set out in manual are acceptable and useful to stakeholders
Output 2.7			
Year 2 community agreements and designs on rural WSS for 34 villages	34 village level community agreements and designs completed	Copies of WS designs and village agreements	Designs and agreements reflect the requirements of both village communities and municipal government
Output 2.8			
Phase 2 implementation of rural WSS systems in 34 villages with village training	Community water supply systems installed in 8 villages	Construction report	Village agreements in place, designs are completed, materials available, villagers contribute labour and receive training.
Output 2.9			
Program review	Evaluation report	Evaluation report received and accepted by AusAID	Program implemented and stakeholders participate in review process

COMPONENT 3: HEALTH EDUCATION			
Objective Level & Narrative Summary	**Verifiable Indicators**	**Means of Verification**	**Assumptions**
To provide technical assistance in order to strengthen the capacity of the Shigatse Public Health Bureau to improve the health and environmental health education services for the people within the Shigatse Municipality	Villagers more frequently access medical services in villages and townships Villagers demonstrate increased knowledge of health issues, and improved practices related to appropriate handling of water Improved health education training at City, township and village level Improved IEC materials on health and environmental health education	Township clinic records Village surveys pre and post program Project impact surveys Content of IEC materials	Improved access to health knowledge will improve health practice at household level Villagers cultural practices and beliefs do not impede the transfer or uptake of information about improved health and environmental health practices; economic capacity does not impede application of knowledge to practice
Output 3.1			
Health education program, including environmental health, implemented	Health education program planned and implemented	Environmental health and practices status report; Health education materials; Health education evaluation report	Local government and community support exists for health education
Output 3.2			
Health workers and community members with increased skills to deliver health education programs	Health workers and community members have increased capacity to delver health education programs	Health workers with improved interpersonal communication skills	

COMPONENT 4: PROJECT MANAGEMENT			
Objective Level & Narrative Summary	**Verifiable Indicators**	**Means of Verification**	**Assumptions**
To manage the project so that objectives are achieved within agreed budgets and schedules, and all monitoring and reporting commitments are met	Project management effectiveness and efficiency indicator Monitoring and Evaluation framework	Project reports	
Output 4.1			
Project Management and appropriate consultants recruited, equipped and mobilised	Project implemented	Project reports	
Output 4.2			
Monitoring, reporting and evaluation is carried out effectively and in accordance with project design indicators	Monitoring and evaluation systems are operational	Project records	
Output 4.3			
External review of project at end of Year One	Review report with recommendations produced and acted upon	Report delivered to GOA and GOPRC Project extended or completed	

APPENDIX II
EVALUATION OF THE TIBET PRIMARY HEALTH CARE AND WATER SUPPLY PROJECT
(SHORT) TERMS OF REFERENCE

Introduction

The Tibet Primary Health Care and Water Supply Project was a response to requests from the Government of the People's Republic of China (GOPRC) for poverty alleviation activities in Tibet. The Project was sited in Shigatse Municipality[24], to pilot simple inputs to improve rural health[25]. The Project Completion Report (December 2000) has identified the Project as appropriate for ex post evaluation, especially if targeted to aid in the design or inception of future health programs in Tibet.

Background

The goal of the Project was to strengthen and support the GOPRC's capacity to deliver health services and supply water to the rural villages of the Shigatse Municipality.

The Project purpose was to improve householder's access to, and utilisation of, health care services and water. The Project had four components:

PRIMARY HEALTH CARE

Objective: To provide technical assistance to improve the quality and coverage of the Primary Health Care services in rural villages and townships of Shigatse Municipality.

Expected outputs:

- Study tour for health managers to relevant projects in Nepal, and for water managers to Ningxia.
- Upgraded village and township health facilities.
- City hospital doctors with improved capacity to develop and conduct health worker training.
- Township clinic doctors, midwives and village health workers (VHWs) with strengthened capacity to deliver health services.
- Rationalisation of drug use and supply.
- Enhanced outreach and referral capacity of the City Health and Epidemic Prevention Centre, township clinics and VHWs.
- Water quality testing for all new water supply systems.

24 Shigatse City, 10 townships and two urban brigades and 175 administrative villages. Each administrative village has a number of associated natural villages.

25 The Australian Red Cross, MacFarlane Burnet Centre for Medical Research, ANUTECH, and Swiss Red Cross implemented the Project.

VILLAGE WATER SUPPLY

Objective: To improve household access to water supply in 54 rural villages.

Expected outputs:

- Water Supply status report.
- Pre-construction training program for Water Resource Bureau staff.
- Year 1 community agreements and system designs on rural WS systems for 20 villages.
- Year 1 implementation of rural WS systems in 20 villages.
- Year 1 program review.
- Year 2 repeat as above.
- Water Supply Manual (translated into Mandarin and Tibetan).

HEALTH EDUCATION

Objective: To provide technical assistance to strengthen the capacity of the Shigatse Public Health Bureau to improve the health and environmental health education services for the people within Shigatse Municipality.

Expected outputs:

- Health education program.
- Health workers and community members with increased skills to deliver health education programs.

PROJECT MANAGEMENT

Objective: To manage the Project so that objectives are achieved within agreed budgets and schedules, and all monitoring and reporting commitments are met.

Expected outputs:

- Project established, staffed, implemented and completed.
- Effective monitoring and evaluation.
- External Review of Project implemented (March 1999).

The Project commenced on 15 December 1997. The primary health care components of the Project and 44 water supply systems were completed by 14 December 2000. A short extension was approved to allow completion of the remaining 10 water supply facilities by September 2001. There was a mid-Term Review in March 1999. The total cost of the Project was in the order of A$4.34 million plus GOPRC costs.

Objectives of the evaluation

The objectives of the evaluation are:

- To assess the relevance, effectiveness, efficiency, impact and sustainability of the Tibet Primary Health Care and Water Supply Project.

One of the key outputs will be lessons learned about effective methods to design and implement aid projects (particularly health and water supply projects) in the harsh climate and resource poor communities which characterise Tibet.

Scope of the evaluation

The scope of the evaluation will take due account of AusAID's Activity Quality Standards. The evaluation will examine:

- Briefly – The appropriateness of the objectives and the project design in the economic and social development context of Tibet, eg:
  - Were the objectives clear, realistic, appropriate and in a priority sector?
  - What is the profile of the client group for the Project outputs? Does the Project service the rural poor? What is the gender mix?
  - Were the Government, communities and other stakeholders actively involved in a participatory identification and design of the Project? Were the design, the bilateral technical cooperation process, and respective roles and responsibilities clearly understood by all participants at the outset of the Project?
  - Was the design process thorough, using a log frame approach and including a comprehensive appraisal? Were alternative approaches considered in detail? For example, should a longer Inception Phase have been included, and/or an extended timeframe for implementation? Were sufficient resources allocated to the development of a baseline? (There was virtually no baseline information available. This was one of the biggest challenges facing the Project.)
  - Was there adequate information available[26] to ensure that the design was of a high standard, meeting all AusAID requirements? Did it include a risk and a sustainability analysis and an explicit link to poverty reduction?
- Briefly – The professionalism of management of the Project, eg.
  - Was the Project implemented in a timely, efficient and responsive manner? Did management procedures and reporting meet AusAID needs? Was the contractor reliable and professional? Was the contractor innovative and responsive to needs and risks identified during Project implementation[27]?
  - Was the contracting strategy appropriate to the requirements of the Project?
  - Was the partner government's policy environment favourable for Project implementation? Was there a clear understanding of respective responsibilities and contributions, and was there strong support and collaboration between the Project and GOPRC at all levels?
  - Did the institutional and organisational arrangements work well and were GOPRC inputs maintained at levels agreed in the PDD and MOU? (An important Chinese counterpart input was meant to be water quality testing however this has not happened. This will be an issue for the evaluation to look at.)
  - Did AusAID desk and post staff support the Project in a professional manner, using sound risk management and making appropriate use of expertise of other AusAID staff?

26 eg. on epidemiology of local diseases, health seeking behaviours.

27 eg. hepatitis studies, study of back pain, adaptation of IMCI.

  - Was there a suitable monitoring framework?
  - Was there adequate and constructive communication between AusAID staff, the Australian Team Leader and the GOPRC Team Leader?
  - Was the system of Project Coordination Committees and/or other supervisory structures efficient and effective in identifying and resolving issues of concern?
- Substantively – The extent to which the Project has achieved its goal and objectives eg:
  - Were planned activities and outputs completed on schedule and within budget? Are planned outcomes/impact likely to be achieved?
  - Were outputs of sufficient standard to meet the needs of the target population? Is achievement of outcomes likely to be facilitated by the high standard of the outputs?
  - Did benefits to the target population occur on schedule? Was the target population's response to the Project consistent with that anticipated in the Project design? Are improved standards of living likely to occur? Are improvements likely to occur in gender equity and/or the environmental situation?
  - If possible, a cost-benefit analysis should be undertaken.
- Substantively – The sustainability of outcomes of the Project eg:
  - Was there a sustainability strategy that was monitored and adjusted as required during project implementation?
  - Did the Project introduce mechanisms to maintain the improved knowledge, skills, systems and resources introduced through the Project, at the village, township and municipal level?
  - At the institutional level is there sufficient knowledge and skills (either internally or on contract) to maintain the organisational structure, systems and hardware which sustain its increased institutional capacity?
  - Would the Project have been more efficient and effective if implemented at the prefecture, rather than the municipal, level?
  - Does the GOPRC have high level political support for, and 'ownership' of, the project outcomes and outputs? Will it provide adequate recurrent budget after the Project is completed?
  - Will village and township communities be able to raise sufficient financial resources for effective, on-going, operation and maintenance of community water supply systems? Will individuals be able to meet the costs of accessing improved health facilities and services?
  - Has the Project included training for GOPRC officials and staff in how to manage activities with resources available after the Project finishes.
  - Is the GOPRC's economic and social policy context favourable for continuation of benefits after Project completion?
  - Do the beneficiaries at the institutional and village level have ownership of the Project? Are Village Water Manuals and Project health training materials still in use?

Duration and phasing

The Evalution will be timed so that the Field Mission can be undertaken during October 2001.

Evaluation elements	Indicative Timing
Finalisation of ToR	August 2001
Identification of potential members of the Evaluation Team	9 July–2 August 2001
Selection and contracting of the Evaluation Team	August 2001
Desk Review in AusAID Canberra, and discussions with AMC.	24–26 Sept. 2001
Field Review	13 Oct.–1 Nov. 2001
Aide memoire	Completion of Field Review.
Draft Report submitted to AusAID PRG[28] and other stakeholders	30 November 2001
PRG's comments passed to Evaluation Team	19 December 2001
Draft Final Report	14 February 2002
Draft Final Report submitted to AusAID PRG and other stakeholders	15 February 2002
Report finalized	March 2002
Report published and distributed	April 2002

28 The Peer Review Group membership will be drawn from: PIA, NAS, GHEG, RDIEG.

APPENDIX III
STRUCTURAL ISSUES IN THE CHINA HEALTH SECTOR

Dr Liu Yunguo & Dr Rob Condon

INTRODUCTION

Since the beginning of economic reform and the more open policies of the late 1970s, China has achieved a great deal in terms of economic and social development, including enormous health gains. These health gains include a significant reduction of infant mortality rate, an increase in average life expectancy, and the successful control of many infectious diseases (with dramatic declines in disease-specific morbidity and mortality rates).

However, the health sector in China is now facing some important new challenges and some very difficult choices. These can be classified into three areas:

1. widening gaps between different groups in their allocated share of health resources and access to health care;
2. inefficiencies in the delivery of health care; and
3. a cost of health care that is escalating so fast that it is often beyond the affordability of most Chinese citizens.

These factors have already led to noticeable and measurable negative impacts on people's health[29].

To cope with the new challenges induced by the overall social and economic changes, to sustain the health gains of recent decades and to further improve people's health status, the Central Government issued the *Decisions on Health Reform and Development* on January 15, 1997[30]. This document outlined directions and principles for nation-wide health reform. It stressed the importance of, and set forth a series of, strategies for rural health development. These strategies include:

- initiatives to develop and strengthen the system of **cooperative medical schemes** (CMS);
- strengthening **rural medical institutions**, and improving the three-tiered (county, township and village) medical service network;
- consolidating the contingents of rural medical personnel at the grass-roots level and raising their **professional competence**;
- establishing a system under which urban medical institutions **assist their counterparts in rural areas**; and
- paying closer attention to improving the impact of the health sector in **impoverished areas** and in areas inhabited by **ethnic minorities**.

Under the guidance of the *Decisions* document, enormous efforts have been made at the central and local levels to improve health planning, mobilize resources and readjust government budgetary allocation to provide and improve basic health services to rural residents.

29 Liu Yunguo. (2001). Policy issues of reproductive health in rural health care reform of China. In: Collection of the International Conference on China Rural Health Reform and Development. Eds. CHEI and IDS, Beijing, P177–181

30 The State Council. (1997). Decisions on health reform and development. Beijing, January 15, 1997

RURAL HEALTH STRUCTURE IN CHINA

There are six administrative levels of the health system in China:

1. National (Central) level – Ministry of Health (MOH);
2. Provincial (Regional) level – e.g. Tibet Autonomous Region;
3. Prefecture level;
4. County level;
5. Township level (Central and General); and
6. Village level.

At each level, from the Central down to the County, there is an administrative Health Bureau that has responsibility for managing all health facilities at that level. Although the Health Bureau has an administrative function to institutes at its own level, it only has a directive and advisory role to lower level bureaus and facilities.

There are three cornerstones of the health care delivery system, each administered as a vertical stream within the overall health sector. They are the hospital, the maternal and child health (MCH) institute and the Epidemic Prevention Station (EPS), which are set up at the provincial, prefecture and county levels. For technical standards, one MCH or EPS at a higher level usually has a supervisory and training responsibility for its counterpart institutions at lower levels.

The **hospital system** consists of general and specialized services that combine western medicine with traditional Chinese medicine (TCM). Hospitals mainly provide curative services, possess the more sophisticated diagnostic equipment, and accept patients referred from lower level institutions. They also consume most of the available health resources.

MCH institutes play a leading role in providing clinical and preventive maternal and child health care, conducting field visits and supervision to lower level institutes (down to township and village levels). Their responsibilities also include collecting data and submitting regular reports on MCH issues and performance.

EPS is the key public health institution responsible for disease prevention and health promotion. Its major tasks include communicable disease surveillance and control, the expanded program on immunization (EPI) for children, control of endemic diseases (e.g. iodine deficiency disorders), community health education, environmental hygiene and information management.

At each level, several other health institutions exist in parallel with these three. They include medical and health training schools (providing basic medical education and producing graduates for health posts at all levels), health education institutes (which deliver health education programs for public or specific groups), and blood supply stations (collecting, processing and providing human blood for medical use). Endemic disease prevention stations are engaged in the prevention and treatment of various local conditions such as iodine deficiency disorders, fluorosis, etc. These institutions may act as independent agencies, or may be merged with other entities.

FISCAL DECENTRALIZATION AND ITS IMPACTS ON RURAL HEALTH CARE

Since the late 1970s, even though the overall GDP in China has increased by more than 7% each year, government revenue has declined (from 31.24% of the GDP in 1978 to 10.7% in 1995 – its lowest point in history). Following the fiscal reforms of the mid-1990s, the ratio of government revenue to GDP has gradually recovered (to 13.87% in 1999).

The proportion of government inputs into total health expenditure has declined dramatically, from 25% in 1990 to 16% in 1998. Correspondingly, the individual share of health sector expenditure increased from 37% to 58% over the same period. One portion of the governmental health expenditure is reserved for public health services, and another for the Government Insurance Scheme. Further analysis indicates that the proportion of total health expenditure for public health services has been decreasing.

Under the decentralized fiscal system, each level of government is mainly responsible for funding health facilities and health programs at its own level. Very few programs provide financial support to lower levels. However, an example of one program that did was the "Three Items Construction Program" of 1991–2000, which aimed to build county MCH institutes, county EPSs and township health centres all over the country and was co-financed by governments from the central down to the township level. Despite the outward benefits of improved facilities at county and township levels, this program has put a lot of fiscal pressure on poor counties and townships and there is sometimes no government funding allocation available at all to operate the new health institutes and clinical services.

Neither is the salary of health staff at township and higher levels fully paid nor guaranteed – clinicians must rely on additional incomes generated through provision of diagnostic and curative services. Village health workers may also get small subsidies through these avenues, so there is little incentive for provision of non-profitable services such as preventive care.

Consequently, gaps between poor and better off areas in terms of access to basic health services have been widening, and discrepancies in health status are now appearing.

To rectify these unexpected impacts of fiscal decentralization, adequate fiscal transfer and the establishment of a stronger public financing mechanisms are needed, and are currently under development.

FEATURES OF THE HEALTH SYSTEM AND ITS FINANCING IN TIBET

As an autonomous region Tibet retains some features of its own. Its health system, especially the three-tiered health care delivery institutes in rural areas, has not been segmented as in other provinces. All health workers at township level and above are fully paid from the government budget, and village doctors get a fixed subsidy (usually 20 to 40 RMB per month), provided by local government. Payments are not directly linked with clinical incomes, so there are no strong incentives for them to focus on curative care for income generation at the expense of preventive services.

The Regional Government is playing a dominant role in providing and financing basic health care to all of the population in the region. For example, in CMS, which is developing rapidly, the average funds raised from all sources in 1999 was about 25 Yuan per enrolee – the Regional Government contributed 10 Yuan, prefecture and county governments together contributed 5 Yuan, with the rest mainly collected from the enrolee.

In Shigatse Municipality, unlike other inland counties, the Municipal hospital is functioning as a county hospital, MCH institute, and EPS combined. All these functions are integrated into one institute – the Shigatse City Hospital and Epidemic Prevention Center. It is premature to say that this integrated structure is a forerunner for the whole region, but the health sector and delivery of different "streams" of services does seem to be more horizontally integrated than elsewhere in China. The model is suited to the current local situation, and avoids the structural duplications that have occurred in other areas.

These features of the Tibetan health care and health financing system also favour relative equality of access to basic essential health care for the whole population. As health reforms continue and more structural changes occur in the health sector, donors need to pay close attention to these features and changes, and give them full consideration when designing or implementing any new health or health-related projects.

APPENDIX IV
THE COOPERATIVE MEDICAL SYSTEM IN THE PEOPLE'S REPUBLIC OF CHINA

(with special reference to the Tibet Autonomous Region and the Shigatse Municipality)

Dr Liu Yunguo and Dr Rob Condon[31]

A BRIEF HISTORY OF CMS IN CHINA

The Cooperative Medical System (CMS; also called Cooperative Medical Schemes or Cooperative Medical Services) first came into existence in China in the mid-1950s, with the aim of providing basic preventive and curative care for residents of rural areas.

CMS reached its heyday in the 1960s and 1970s. At that time, it was characterised by a wide coverage, relatively equal access, and low costs. Enrolment into a CMS cost between one and 5 renminbi (RMB) annually. Benefits included free health care and drugs at village level (excluding a 5 cents registration fee per outpatient visit, or for each day of inpatient care), and subsidized services at higher levels.

At its peak in 1979, CMS covered 90% of China's rural population. It has been identified as one of the key factors contributing to the outstanding improvement in the health status of the Chinese population from the 1950s to the 1970s. During that period, the infant mortality rate fell by 80% (from about 250 per 1,000 live births in 1952 to 51 per 1,000 in 1980), and life expectancy almost doubled (from about 35 years in 1952 to 66 years in 1980).

There were four mainstays to the development and success of CMS:

(a) The Commune System[32]

Under the commune system, each member worked for an administrative village (the basic unit of a commune). People would earn "work points" for their daily labour contribution, but the village and commune retained all income generated by its members. At the end of each year, after deduction of contributions for the social welfare fund, an accumulation fund, and other administrative funds, the remaining income was distributed among commune members; each individual receiving an allocation according to their accumulated number of work points. (In financial terms, this system was referred to as the "collective economy"; it was the major source of funding for CMS). During the Cultural Revolution (1966–1976), CMS was given political priority and its development was rapid.

31 The authors thank other members of the evaluation team and the Shigatse Municipal Health Bureau for their assistance in developing this paper.

32 A commune is equivalent to a current township. A commune or a township consists of a number of administrative villages. Each administrative village may include several natural villages.

(b) The Barefoot Doctors

Barefoot Doctors were essentially farmers who had received an additional 6 to 12 months of health-related training after secondary school. Their training included first aid, preventive care (e.g. immunization), and the treatment of common ailments using a limited range of Traditional Chinese Medicine (TCM), western medicine and acupuncture. They also attended births when requested. When they had no patients to care for, they would work in the fields just like other commune members, or would spend time collecting and processing medicinal herbs. They earned work points either by providing health care or through agriculture labour and, like their fellow villagers, were paid from village funds according to their accumulated work points at the end of the year. The only extra income a barefoot doctor could earn was a subsidy of 3 to 9 RMB per month (the subsidy varied from region to region) based on performance and whether he/she needed to stay at the village clinic overnight.

Barefoot doctors were supervised from the nearest township health centre. At a monthly township health meeting, they would submit their registration fees, copies of prescriptions and any required reports, replenish their medicine supplies, and collect their subsidy payments. The monthly meeting was also a venue for training, allocation of tasks for preventive actions, and the exchange of experience and ideas with colleagues.

(c) The three-tiered health care delivery system.

In the rural areas, this comprised village health clinics, township health centres and county hospitals. The village stations were staffed by the barefoot doctors. Township health centres usually had no more than 50 beds, and were overseen by a physician with three years of post-secondary medical school education; the physician would be assisted by midwives and maternal and child health (MCH) nurses. A county hospital would usually have 100 to 300 beds and be staffed by fully qualified physicians, with four to five years of medical training after high school; other staff included nurses, midwives and technicians. This system provided a structure for efficient patient referral for treatment of health problems that were beyond the capacity of the lower tier. As each tier had a clearly defined role, the system also ensured that CMS enrollees would have access to the appropriate level of basic essential health care.

(d) Strong patriotic public health campaigns.

These health promotion campaigns focused on preventive actions, using the full participation of communities and the resources of various government sectors. The use of TCM, local medicinal herbs and community-based interventions were strongly encouraged. Environmental hygiene (e.g. hand pumps for water supplies, latrines) was also advocated. Villagers were mobilised to kill disease vectors such as rats, snails, flies and mosquitoes. This strategy of "putting prevention first" significantly reduced morbidity rates, and was a key to keeping the costs of health care under CMS down.

From the early 1980s, CMS gradually began to collapse in most areas of China, and this had a great impact on China's health profile. There are many possible reasons for the breakdown of CMS, but it is generally attributed to the following factors:

(a) The absence of legislation to ensure its legitimacy and continuation;
(b) The transition from an agricultural collective economy to the household responsibility system[33], which demolished the financial base of CMS;
(c) Problems related to poor management; and
(d) In the 1980s, being strongly identified with the Cultural Revolution (because of this association, political leaders were reluctant to take the necessary actions that might have averted the failure of CMS in a rapidly changing social environment).

By the end of the 1980s, CMS only persisted in a few scattered areas, covering less than 10% of the rural population.

NATIONAL POLICY ON CMS

The collapse of CMS set barefoot doctors free to take up full time farming, or to operate as private health practitioners without any effective regulation. Most of those working as health practitioners earned a living by prescribing and selling drugs and administering injections and other treatments, without adequate supervision. To sustain their operations in an era of economic reforms, fiscal decentralization and limited government budgetary allocation, the township and county hospitals (and even some preventive facilities like MCH institutes and epidemic prevention stations) had to rely on income generation through mark-ups on pharmaceutical sales and laboratory testing. The health system became fragmented, with each facility an independent entity competing with others for patients. As a result, the quality of health services has declined markedly, and peasants now have poorer access to basic essential health care than they did under CMS.

The decline of CMS also left more than 90% of the rural population without any form of health insurance. They now have to pay totally out-of-pocket for health care, and access to health care is determined almost solely by ability to pay. Many cannot afford even the most basic health care.

In spite of continued rapid economic growth, no substitute strategies were put in place to compensate for these emerging gaps in health financing and standards of care in rural China. Since the early 1990s, changes in key national health indicators (such as infant, under five and maternal mortality rates, which had previously been improving) have started to slow, or even fluctuate.

To revitalize the rural health delivery system and restore health gains in proportion to economic development, the Central Government has issued a series of policies and guidelines to support the reestablishment of CMS (or to strengthen existing CMS) in rural China.

33 The household responsibility system was introduced in the late 1970's as an initiative under China's economic reform process. Under this system, each household was allocated a certain area of land for farming. All income belongs to the family, but they need to submit a certain proportion to the village and township as tax and fees for using the land. Overall agricultural production has increased markedly, and farmers have benefited a lot from this reform. At the same time, the commune system has disappeared and the associated collective economy has fundamentally weakened.

(a) In December 1996, the Central Government held the first peak level national health conference in Beijing. In his speech to the conference, President Jiang Zeming stressed the importance of CMS to rural residents. In the same year the Ministry of Health (MOH) held a national symposium in Henan Province to exchange experiences and ideas on CMS.

(b) On January 15, 1997, the State Council promulgated *the Decision on Health Reform and Development*[34], which articulated objectives and strategies for overall health care reform and development in China. This document again emphasized that the achievement of an active, reliable CMS is a national priority in rural health reform.

(c) On May 28, 1997, the State Council issued a document called *Some Opinions on the Development and Improvement of Rural CMS*[35], compiled by the Ministry of Health (MOH) and related ministries. The document identified CMS as an appropriate system for ensuring health care for peasants, and suited to the current economic and social circumstances in China. It stated that CMS must adhere to the following principles:

   i. It should be run by local people, with public assistance,
   ii. It should be run on the basis of voluntary enrolment, according to individual means, and
   iii. Its methods of implementation may be adjusted according to local circumstances and requirements.

   The document required the mobilisation of farmers to participate in CMS by raising their awareness of self-health protection and mutual assistance through propaganda and education. CMS financing would rely mainly on individual contributions, supplemented by collective support and government contributions as appropriate. The management of CMS would be reinforced through relevant bylaws and democratic supervision.

(d) The latest policy related to CMS is the Guidelines for Rural Health Reform and Development[36], issued by the State Council on May 24, 2001. These guidelines were proposed jointly by the State Council System Reform Office, the State Development and Planning Committee, the Ministry of Finance, the Ministry of Agriculture and the MOH. The document encourages local governments to guide and support various types of health insurance schemes for peasants. It also restated the principles for establishing CMS listed in paragraph (c), above.

Despite the political support behind these national policies and guidelines, the development and implementation of CMS in rural China since the 1990s has not gone as well as expected. Pilot studies are being conducted in many provinces (both better-off and poor), including a number that have been initiated with the involvement of national and international experts, NGOs and government agencies. Except for a few counties where CMS has continued uninterrupted since the 1960s or 1970s, not many new counties have successfully implemented a sustainable CMS. The highest reported coverage of CMS since the

34 The Administrative Office of MOH: The Collection of Health Reform and Development Documents. July 2000.

35 The State Council: Notification for forwarding *Some Opinions on the Development and Improvement of Rural CMS* proposed by MOH, et al. Chinese Rural Health Service Administration. 1997, 17 (6): 2-5.

36 MOH policy document, 2001.

implementation of rural economic reform was in 1997, when it was said to have reached 9.6% of the total rural population[37].

It is difficult to explain why it has been so difficult to reintroduce CMS over the last decade. Possible reasons include:

(a) A lack of stable financing. Voluntary enrolment and a dependence on individual premiums are unreliable sources of funding for CMS. In addition, those most in need of the package of basic essential health care provided by CMS are usually the poorest members of society, who cannot afford to join. Others may be capable of paying the premium, but are not really interested in the minimum benefit package provided by CMS. Such factors hinder the sustainability of CMS. Furthermore, in poorer areas, local governments allocate almost nothing to CMS and the collective economy no longer exists.

(b) Little confidence in health care providers. The declining quality of care, an obvious tendency towards income generation, and the high costs of some medical interventions, are enough to scare potential enrollees away.

(c) A low level of funding. In most of the pilot programs, the total amount of funding raised through CMS has usually been between 10 and 20 RMB per capita per year. This is not enough to provide cover for the usual common illnesses, let alone catastrophic illness. Between 1990 and 1999, the average annual income per capita in rural areas was reported to have increased from 686.31 RMB to 2210.34 RMB, a 2.2 fold increase. Over the same period, the average cost of each outpatient visit escalated from 10.9 RMB to 79.0 RMB, a 6.2 fold increase[38].

(d) Lack of effective management. Many CMS schemes are run by township health centres, which also function as health care providers. Unsatisfactory quality of care and inadequate financing have been compounded with poor regulation and lack of democratic monitoring.

HEALTH SECTOR FINANCING AND CMS INITIATIVES IN THE TIBET AUTONOMOUS REGION

Historically, Tibet did not experience the cycle of establishment, consolidation and decline of CMS that characterised rural health financing elsewhere in China. Between 1950 and 1997, all residents of Tibet enjoyed free medical care, either through the Government Insurance Scheme or the Free Medical Care Program.

Government and public enterprises covered almost all necessary costs. For example, in 1978 the total health expenditure in the Region was 21.1 million RMB, or 11.68 RMB per capita, out of which 90% was allocated from the government budget and 10% from either the Labor Insurance Scheme or individual contributions[39].

However, due to the limited financial capacity of the government and the single source of health care financing in the Region, health sector development in Tibet was proceeding

37 Wang Yanzhong. (2001). Discussion on the role of the state in rural health insurance of China. Management and Strategy. (3): 15–24.

38 Ibid.

39 Tudun (Director of the Regional Health Bureau): A speech on the regional CMS promotion meeting. October 10, 1999.

relatively slowly. It was also characterised by very poor infrastructure in the rural areas, a lack of adequate numbers of competent health workers, and severe shortages of drug supply. Solutions to strengthen the rural health system and meet the needs of farmers were urgently needed.

In 1997, responding to the Central Government's decision on health care reform and development, the Tibet Regional Government issued its own local policy on health reform. For the first time, the policy clearly required active development of a reliable CMS in the Region, aiming to cover the majority of townships by the year of 2000. In late 1997, the Regional Government approved plans for a CMS pilot program proposed by the Regional Health Bureau.

In March 1998, the Health Bureau held its first training workshop on primary health care and CMS management. Eighty-three participants attended, including 22 county governors; the other participants were directors of county health and financial bureaus. With the training provided at the workshop, these people became the initial backbone of the CMS pilot program in Tibet. Immediately following the workshop, the Regional Health Bureau sent two teams to Linzhi and Jiangzi County to help set up CMS pilot programs. In November, the first regional conference to exchange experiences about CMS was held in Jiangzi County. The conference further identified the objectives, strategies and policy on CMS, and resolved to expand the pilot program to other areas of Tibet.

With the success of these pilots, the Regional Government delivered a *Notification on Promoting CMS in Rural Areas and Further Improving Primary Health Care (PHC) Work*. This document requested that all pilot counties take effective measures to consolidate their CMS, while counties not yet included in the pilot plan were encouraged to start their own pilot programs, adopting the experience of other counties.

From October 10 to 13, 1999, the Regional Health Bureau held a second CMS experience exchange conference in Bayi Township of Linzhi County. Government leaders and health sector managers from the regional, prefecture and county levels, 160 participants in all, attended the meeting[40]. At the conference, representatives from seven prefectures and five counties presented their experience piloting CMS. All participants made field visits to a number of CMS counties to gain first-hand knowledge of the process, and a draft *Rural CMS Management Methods* was discussed with a view to using it as a guideline, which was officially issued in early 2000 for operating CMS throughout the region. The draft guideline consisted of ten chapters:

1. General principles
2. Organization and leadership
3. Objects, obligation and rights under CMS
4. Format and service scope
5. CMS fund raising, utilization and management

40 Dunzhu (Deputy Director of the Regional Health Bureau): A summary speech at the 2nd regional CMS promotion meeting. October 13, 1999.

6. Reimbursement in CMS
7. Management of health care under CMS
8. Drug management
9. Supervision
10. Supplementary articles

Simultaneously, the Regional and local governments implemented strong and systematic strategies to promote CMS, with policy development well supported by practical experience. This has resulted in the rapid expansion of CMS in the Region.

The following table summarizes the progress and coverage of CMS in Tibet since 1999.

Table 1. CMS coverage in Tibet Autonomous Region, People's Republic of China

Indicators	October 1999	September 2001
Number of counties with CMS	66	70
Number of townships with CMS	455	650
Number of villages with CMS	3697	4530
Population covered by CMS (x10,000)	115.93	162.61
Coverage by county (%)	89.20	94.59
Coverage by township (%)	54.04	88.55
Coverage by village (%)	52.79	69.87
Coverage by rural population (%)	54.84	69.80
Total amount of CMS fund raised (x 10,000 RMB)	2941.8	N/A
Government allocation in CMS fund (%)	53.86	>50

Source: Tibet Regional Health Bureau.

CMS IN SHIGATSE MUNICIPALITY

The Shigatse Municipality is one of 18 counties in Shigatse Prefecture. It is a county level city, comprising 10 rural townships and 165 administrative villages. The total rural population is approximately 67,300.

Following the regional CMS conference in Jiangzi County in November 1998, the prefecture government initiated CMS in 12 counties. Shigatse Municipality was not included in these early programs.

CMS commenced in Shigatse Municipality in August 1999. Based on the regional CMS guidelines and the experience of pilot CMS programs in other counties, the Municipality developed its own CMS implementation plan. The Municipal Government officially released its plan on October 3, 2000[41], by which time CMS pilots already covered 47,117 farmers in the ten townships, accounting for 70% of the total rural population.

During the field trip for the evaluation of the Tibet Primary Health Care and Water Supply Project from October 18 to 27, 2001, the health group of the evaluation team traveled to 8 rural townships and 9 villages in Shigatse Municipality. The team held wide ranging interviews and discussions with local government officials and health workers at municipal,

41 Shigatse Municipality Government. (2000). Opinions on implementing CMS in urban and rural areas. No. [2000] 66.

township and village levels, and with All China Women's Federation representatives, farmers and other community members. The information collected helped them to form a basic understanding of how CMS is operating in the Municipality. The key practices of CMS in Shigatse Municipality are:

(a) The ten CMS principles.
These are: voluntary basis, appropriateness, quality care, equal benefit, special funds only used for CMS, putting prevention first, scientific management, democratic supervision, rational utilization and gradual development.

(b) CMS financing. CMS funds are raised from three sources:
   i. Government budgetary allocation of 15 RMB per capita per year; of this, 10 Yuan comes from the Regional Government, 3 Yuan from the prefecture and 2 Yuan from the Municipal government.
   ii. Individual premiums. In principle, farmers should contribute an amount equivalent to 1.5–3.0 % of their last year's net income. This amounts to about 20 Yuan per enrollee each year in the Municipality. In practice, due to the very limited disposable cash income in most households, only 10 to 13 Yuan were collected in 1999 and 2000. If wage earning employees and their dependents, monks or temporary workers wish to participate in CMS, they need to contribute 100 Yuan each year if they have a regular salary (or 50 Yuan if not in receipt of regular paid income).
   iii. Other sources. CMS premiums for the poorest members of society, those under the "Five Protections"[42], the disabled, and dependents of revolutionary martyrs may be paid by a local collective organisation or the Department of Civil Affairs.

(c) Utilization of CMS funds.
   i. The 25% government contributions to CMS (from all three levels) are retained by the Municipal Health Bureau for funding preventive programs (e.g. EPI, MCH, infectious disease prevention, supervision, and management) and for providing rewards for the best performers in CMS.
   ii. The balance (75%) of government allocations to CMS is combined with all other funds (i.e. raised through individual contributions and other sources) into a pooled fund in each township. This fund is divided into four expenditure categories, each of which is earmarked for a separately identified use. The four expenditure categories are:
      - The Medical Care Fund – accounts for 80% the pooled CMS fund. It is used for reimbursement of the costs of outpatient and inpatient care for enrollees.
      - The Risk Fund – represents about 15% of the pooled CMS fund, and is used for catastrophic illness following which, with the normal level of reimbursement, the patient or his family may be at risk of falling into poverty.

42 The 'Five Protections' is a program that dates back to the time of the commune system, under which five categories of village members were eligible to enjoy a package of benefits necessary for survival, such as a free quota of grain, provided by the collective economy. Community members who fall under the 'Five Protections' are basically people who are totally unable to work to earn a living.

- The Development Fund – up to 3% of the pooled fund. It is reserved for possible overspending of CMS, or unexpected events such as an outbreak of a communicable disease.
- The Management Fund – is about 2% of the pooled fund, and is to be used for CMS administrative costs (forms, cards, office supplies and incentives to outstanding performers).

Savings in one category may be rolled over in the same category for the next year, while overspending in one category may be compensated through transfer of funds from other categories.

(d) CMS benefits. A rural enrolee of CMS enjoys the following package of benefits:

i. Exemption of 70–80% of the out- and in-patient care costs at village and township level health facilities. As most townships had a surplus in their CMS Medical Care Fund in the first year, some are considering increasing the exemption rate in 2002.

ii. Reimbursement of 60% of inpatient care costs incurred at the municipal hospital, if referred by the township health centre. The same level of reimbursement applies for inpatient care costs at the prefecture hospital if the patient is referred by the municipal hospital. The reimbursement rate is subject to periodic readjustment according to the surplus or deficit in the Medical Care Fund, and is decided by the township CMS management committee.

iii. For health care costs incurred at other hospitals, not identified as CMS care providers (e.g. the Prefecture Tibetan Medical Hospital and the Prefecture MCH Hospital), or for patients who self-refer to these higher level facilities, only 15% of outpatient care costs are reimbursed. There is a 100 Yuan per capita ceiling for reimbursement each year. Only 30% of inpatient care costs may be reimbursed.

iv. Entirely free inpatient care and hospital delivery at township health centre for the poorest in society, those under "Five Protections", the disabled without economic productivity, orphans, and dependents of revolutionary martyrs. Each township decides its own policy for these groups, according to local circumstances.

v. The total ceiling per enrollee for annual reimbursement is 1500 Yuan. Any amount under this ceiling can be reimbursed, but must be approved by the township director. Costs higher than this ceiling may be reimbursed from the Risk Fund according to household circumstances, but subject to the agreement of the Township CMS Management Committee and the approval of the Municipal CMS Management Committee.

vi. CMS reimbursement only applies to a defined list of medical services. Services ineligible for reimbursement under CMS are: services to non-CMS members; self-purchased drugs, tonics, blood and blood products; expensive tests such as CT and ultrasound B requested by patient; illness related to taking poisons or alcohol; intentional injury; plastic surgery; spectacles; dental fillings; physical examinations for special purposes; transportation hired by oneself; and registration fees.

(e) Financial Management.

Each township basically runs its own CMS, overseen by a CMS Management Committee. The Township CMS Committee is responsible for CMS fund raising, utilization and financial management rules and procedures (which are subject to the review and approval of the Municipal CMS Management Committee before implementation). The Township Committee must release information about how much funding is raised and spent each year, and the balance of the special CMS bank account at the beginning and end of each year. The purpose of this arrangement is appropriate democratic monitoring. Each township CMS account must also be audited and reviewed by the municipal committee annually.

(f) CMS drug supply.

The Municipal Health Bureau procures all drugs used in township and village health facilities through a competitive bidding process. This is reported to have kept drug prices at much lower levels compared with the past. According to the CMS guidelines developed by the Regional Health Bureau, the range of essential drugs for CMS, including western medicines, Tibetan medicines and TCM, should not number less than 200[43]. More than 200 different common drugs are currently procured and available to township health centres, while village clinics are provided with about 80 different essential drugs. These are additional to the essential drugs list of 28 medicines developed by the AusAID Primary Health Care and Rural Water Supply Project in Shigatse. Township health centres submit their drug plan to the Municipal Health Bureau and receive their supplies from it, while village clinics get their drugs from township health centres.

Since one purpose of establishing the CMS was to reverse the lack of health workers and severe shortages of drug supply in rural areas, the provision of more drugs within the available CMS budget is currently encouraged. As health workers at township and village levels have trained under the AusAID project in the use of essential drugs, they tend to prescribe those 28 essential drugs more frequently than other medications.

(g) The use of CMS service income.

Generally speaking, CMS is a not-for-profit operation. The salary for township health staff and subsidies for village doctors (40–60 Yuan per month) are allocated from the municipal government budget. There are also some possible additional sources of income for township health centres and village clinics, but these are not directly associated with payment to health workers. These sources additional are:

(h) Mark-up on prescribed drugs.

The price of all western drugs dispensed at township health centres may be marked up by 15%, and traditional Tibetan and Chinese medicines by 30%. The Municipal Health Bureau retains all drug mark-up profits. Two-thirds of these funds are used for purchasing consumables (such as cotton and disinfectants, which cannot be priced into the cost of services), and one-third is used for drug delivery and purchase of small items of equipment.

43 The Regional Health Bureau of Tibet. (1999). The Draft of Tibetan Rural CMS Management Methods. In: The Document Collection of Tibet Regional Conference for Promoting CMS. 55-64.

(i) Registration fee.
For each visit to a township or village clinic, a patient pays 0.5 Yuan as a registration fee, regardless of whether he/she is covered by CMS. Village clinics can retain 40% of the registration fee and use it for transportation and certain defined rewards; the remaining 60% must be remitted to the township health centre.

(j) Treatment fees.
Treatment fees include injection fees, fees for changing bandages, etc. Such fees can only be charged at a level set by the Municipal government in 1997. Village clinics are not allowed to charge treatment fees. All treatment fees, together with registration fees (including those submitted by villages) are recorded in a special detailed account, and used for subsidies to midwives and replacement of small items of equipment.

With about two years' operation of CMS in the Municipality, some problems are emerging that are threatening the ability of CMS to attract the continuous participation of villagers, and therefore its sustainability. In some villages, previously enrolled individuals and families have dropped out of CMS, basically for three reasons: (i) they cannot afford the premium; (ii) they can afford the premium, but are dissatisfied with the services and prefer to bypass the township level; and (iii) they remained healthy during their first year of membership and had no contact with health service providers.

Factors threatening CMS sustainability include:

(a) Qualifications and skill levels of staff at township health centres. Most of the existing health workers have limited education and training, and need further skill development in therapeutic interventions. For example, intravenous infusions and antibiotics continue to be used widely (and sometimes inappropriately) to treat most conditions, whether mild or severe.

(b) The very poor infrastructure of township health centres, which limits their ability to provide basic services. Currently, no township clinic can provide even the simplest routine tests of blood (e.g. haemoglobin), urine (e.g. basic test tube or dip-stick urinalysis) or faeces. Although some township clinics are connected to the electricity supply grid, none has a refrigerator; consequently, the cold chain is very fragile at the township level.

(c) The need for management improvement. Systematic reporting and monitoring of CMS performance and impact needs to be introduced and strategies identified for improving its management. CMS fund usage, the implications of the quantity and kinds of drugs procured on service costs, and the level of satisfaction of farmers and other community members with CMS all need to be reviewed. Moreover, health information systems need to be generally strengthened. This will assist with monitoring the impact of preventive programs and improved standards of care, and will inform adjustments of CMS implementation, health decision-making and related areas of policy development

(d) Timely availability of government funding. Even though the regional funding allocation for CMS is usually guaranteed, prefecture and municipal government contributions are sometimes not forthcoming. For long term sustainability, CMS financing should gradually be institutionalised.

INTERACTIONS BETWEEN CMS AND THE AUSAID PROJECT

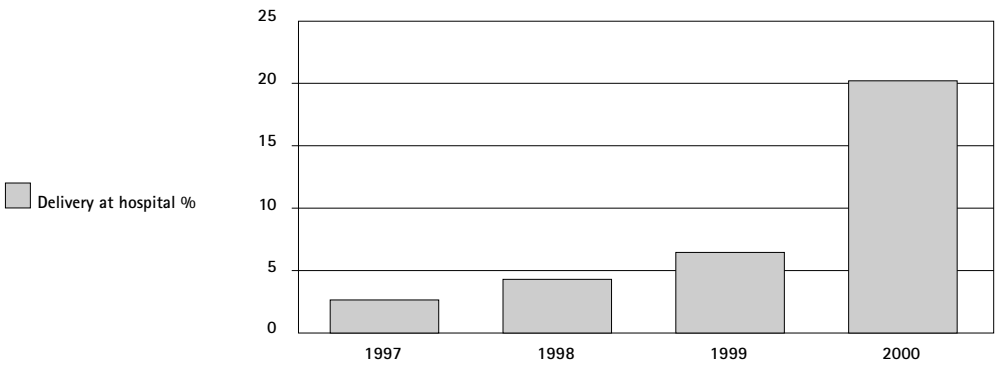
The local officials and villagers acknowledged that the Tibet Primary Health Care and Rural Water Supply Project has contributed to the successful establishment and the likely sustainability of CMS in at least three ways:

(a) Improved health infrastructure

With Project support, 8 rural township health centres, 82 village clinics, and the new Shigatse City Hospital were built or rehabilitated. This has substantially strengthened the ability of the Municipality to deliver primary health care at the grassroots level.

For example, all these newly built township health centres are capable of providing better obstetric care; there is also a strong financial incentive through CMS (delivery at township health centre is not only entirely free, but also accrues a 100 Yuan cash reward). The proportion of institutional deliveries in the ten rural townships has increased accordingly, as shown in Figure 1. The number of maternal death in these rural areas was 1 in 1997, 4 in 1998, 2 in 1999, and 0 in 2000 and 2001 (to date).

Figure 1. Trends in institutional delivery in the ten rural townships, as a percentage of all deliveries in Shigatse Municipality[44]



44 Data source: Routine report on MCH as summarized by Shigatse Municipal Hospital.

(b) Improved competence of health workers

This has been one of the major achievements of the training programs implemented by the Project. The Project has developed a range of trilingual (Tibetan, Chinese and English) training materials and clinical reference manuals on safe motherhood, integrated management of childhood illness (IMCI), rational drug use, safe injection and emergency first aid. These resources are used for basic and refresher training of village doctors, refresher training for medical specialists and training-of-trainer programs. The improvement in health worker competence has contributed greatly to raising the quality of service, and this is arguably the single most important factor in CMS sustainability.

(c) Water supply and community health promotion

The water supply and community health promotion components of the Project have contributed to reduced morbidity.

The water supply program has promoted better hygiene (e.g. washing of hands, face, body and clothes), and better health (identified by community members as a reduction in the incidence of diarrhoea, hepatitis, skin sores and eye infections).

These achievements are reinforced by the effectiveness of the health promotion strategies implemented through the Project. According to local health workers and community members, the strengths of this program are: its health promotion resources (posters, flip charts, etc), which are culturally sensitive, clearly illustrated and use appropriate written forms of Tibetan language; training of health promotion trainers; and the strong support of village and township leaders for health promotion activities. The reduction of morbidity through these interventions is critical in controlling CMS cost blowouts.

Conversely, the establishment and continued operation of CMS has provided a base for sustaining some of the outcomes of the Project. For instance, the emphasis on quality care under CMS, and its referral system, will encourage health workers to incorporate what they learned in Project-supported training into their daily practice, and to refer to their training manuals frequently. Many health staff at the township and village levels commented enthusiastically to the evaluation mission about training undertaken through the Project, and requested future support for continued training through AusAID-funded channels. The cost control requirements of CMS may also motivate local authorities and communities to continue the preventive interventions initiated by the Project health promotion component.

The Project began on 15 December 1997, and its primary health care and health promotion components were completed on 14 December 2000. CMS was introduced in Shigatse Municipality in August 1999, around the middle of the Project. It is not altogether clear why, but the Project did not respond actively to the introduction of CMS. Areas of expertise that the Project could have contributed include: assisting with training for CMS management; further inputs on quality care standards; and readjusting the essential drug list to meet the changing needs (brought about by the expanded range of medications available through the clinics following introduction of CMS). Factors related to this apparent lack of response might include a lack of policy communication channels with local, prefectural and regional governments; limited flexibility in the Project design and implementation; a limited budget; and the time pressures of meeting project milestones and the implementation schedule.

CONCLUSIONS

The CMS in Tibet appears very promising, but more efforts and assistance are needed to make it develop into a stable health insurance system for farmers and other members of rural communities.

It is an historic opportunity for policy makers, and for the hundreds of thousands of poor rural residents endeavouring to improve their living standards, health and well being.

External donors, too, have the opportunity to provide technical and managerial expertise that can assist Tibet and other rural agricultural provinces of China to make the transition to an affordable, sustainable system of health financing.

APPENDIX V
FIELD TRIP ITINERARY

13 October–1 November 2001

Day No	Date	Location	Activity
1	Saturday, October 13	Australia to Hong Kong	Australia based team members meet at Golden Mile Holiday Inn, Hong Kong.
2	Sunday, October 14	Hong Kong to Chengdu *or* Beijing to Chengdu	Australia and Beijing-based team members fly to Chengdu (meet at Tibet Hotel). Obtain air tickets and entry permits for Tibet.
3	Monday, October 15	Chengdu to Lhasa	Early departure from Chengdu. Acclimatisation in Lhasa (Kyi Chu Hotel).
4	Tuesday, October 16	Lhasa	Acclimatisation in Lhasa. Team meeting — confirm and prepare for consultations in Lhasa on 17 October. Meeting with DOFTEC.
5	Wednesday, October 17	Lhasa	Team meeting — review of Cooperative Medical Schemes. Meeting — Provincial Health Bureau (MCH, Drug Administration, Epidemic Prevention Service), Tibet Red Cross, Provincial Water Supply Bureau, DOFTEC. Meetings with iNGOs — World Concern, SCF(UK), MSF-Belgium.
6	Thursday, October 18	Lhasa to Shigatse	Drive to Shigatse (Shigatse Hotel). Team meeting — prepare for consultations in Shigatse on 18–19 October. Meeting — Vice-Governor of Shigatse Municipal Government and health and water supply representatives, confirm itinerary for meetings in Shigatse and site visits. Team meeting — review State systems and structures in health sector in China.
7	Friday, October 19	Shigatse	Meetings — City Health and Epidemic Prevention Centre, Municipal Health Bureau, Water Resources Bureau.

Day No	Date	Location	Activity
8	Saturday, October 20	Shigatse Prefecture	Township / village visits: Health — Lian and Nian Mu township clinics; Chasang, Taqing and Punu (Sandrup Khadze village clinics. Water — Zongluguri, Nadang and Dacuo in Qu Mei Xiong; Tama and Punu (Sandrup Khadze) in Bian Xiong.
9	Sunday, October 21	Shigatse	Team meeting — review field visits on 20 October, plan for village visits and meetings 22–27 October, and plan *Aide Memoire* and Evaluation Report. Begin drafting *Aide Memoire* and Evaluation Report. Meeting — Swiss Red Cross.
10	Monday, October 22	Shigatse Prefecture	Township/village visits: Health — Qu Mei and Na Er township clinics; Deqing and Nadang village clinics. Water — Jiangdang, Angon, Numree, Shunchong and Longsang in Jiangdang.
11	Tuesday, October 23	Shigatse Prefecture Shigatse	Township/village visits: Health — Qu Bu Xiong township clinic, Ding (Kangsha) village clinic and Qu Bu township centre. Water — Nian Mu township, Puga, Danggu, Jimuxiong, and Puxia in Nian Mu. Meeting — Epidemic Prevention Service (EPS; Shigatse Municipal Health Bureau).
12	Wednesday, October 24	Shigatse	Meetings — Shigatse Prefecture Health Bureau, Shigatse Prefecture Professional Training School, Shigatse Prefecture EPS and laboratory, Shigatse Municipal WRB.
13	Thursday, October 25	Shigatse Prefecture	Township/village visits: Health — Dong Ga township clinic; Jiamaqie and Zhugüi village clinics. Water — Kaduo, Jiamaqie and Zangguo in Dong Ga.
14	Friday, October 26	Shigatse	Meetings — Shigatse Prefecture WRB, EU-China PIRD Project Prepare brief to Shigatse City Government. Wrap-up meeting with City Government.

Day No	Date	Location	Activity
15	Saturday, October 27	Shigatse to Lhasa	Township/village visits *en route*: Health — Bian Xiong and Jiang Dang township clinics; Kungpolin village clinic. Drive back to Lhasa.
16	Sunday, October 28	Lhasa	Continue drafting *aide memoire* and Evaluation Report.
17	Monday, October 29	Lhasa	Complete *aide memoire*. Wrap-up meeting(s) in Lhasa — presentation of *aide memoire* to DOFTEC, discussion of issues.
18	Tuesday, October 30	Lhasa	Team meeting. Continue drafting Evaluation Report.
19	Wednesday, October 31	Lhasa to Chengdu, then to Beijing, *or* Hong Kong and Australia	Team members fly home.
20	Thursday, November 1	Canberra or Townsville	Australia-based team members arrive home.

APPENDIX VI
PEOPLE AND ORGANISATIONS CONSULTED IN THE TIBET AUTONOMOUS REGION

13 October - 1 November 2001

Date	Location	Name	Position	Organisation/Community
Tuesday, October 16	Lhasa	Mr Dawar Tsering	Deputy Division Chief	Foreign Economy Administration Division, DOFTEC, Tibet
		Ms Yu Zhen	Program Officer	
Wednesday, October 17	Lhasa	Dr Dun Zhu	Deputy Director	Regional Health Bureau, Tibet
		Mr Bai Jianbin	Director	Dept. Disease Control, Tibet Regional Health Bureau
		Mr Xu Ruo	Program Officer	Regional Epidemic Prevention Service
		Mr Luo San	Deputy Division Chief	Regional Maternal and Child Health
		Mr Kunga	Deputy Director	Tibet Red Cross
		Mr Ren Qing	Head	Regional Water Resources Bureau
		Ms Yu Zhen	Program Officer	Foreign Economy Administration Division, DOFTEC, Tibet
		Mr Seerp Wigboldus	Program Manager	World Concern
		Ms Susan Roe	Programme Manager	Save the Children (UK) Tibet Programme
		Ms Isabelle Cazottes	Community Health Advisor	
		Mr Romesh Bhusal	Water Supply Engineer	
		Ms Susanna Cristofani	Outgoing Field Coordinator	Médecins Sans Frontières (Belgium)
		Mr Konrad Pütz	Incoming Field Coordinator	
		Ms Frederique Thibaut	Deputy Field Coordinator	
		Ms Francoise Begaux	Coordinator, Kashin-Beck Disease Project	
Thursday, October 18	Shigatse	Ms Uozhu Zuoma	Vice Director	Shigatse Municipal Government
		Mr Zhamdu	Vice Director	Shigatse Water Resources Bureau
		Mr Dakwang	Vice Governor	Shigatse Municipal Health Bureau

Date	Location	Name	Position	Organisation/Community
Friday, October 19	Shigatse	Dr Tudeng Dawa	Director	Shigatse City Health and Epidemic Prevention Bureau
		Mr Dorje	Vice Director	Shigatse City Health and Epidemic Prevention Bureau
		Mr Dakwang	Vice Director	Shigatse Municipal Health Bureau
		Mr Zhamdu	Vice-Director	Shigatse Water Resources Bureau
		Mr Tenzin	Former Water Technician	
		Mr Zhang Min Zhu	Former Chinese Water Technician	
		Mr Dorje	Vice Director	Shigatse City Health and Epidemic Prevention Bureau
		Dr Bian Tsang	Paediatrician / trainer	
		Dr Ren Qu	Obstetrician / trainer	
		Mr Dakwang	Vice Director	Shigatse Municipal Health Bureau
Saturday, October 20	Shigatse Municipality	Ms Tashi Droma	Midwife	Lian township clinic
		Mr Dawa Tsering	Village doctor	Taqing village clinic
		Dr Nunzi	Doctor / midwife	Nian Mu township clinic
		Dr Pubu	Village doctor	Punu (Sandrup Khadze) village clinics
		Villagers	Including village leader	Nadang village
		Villagers	Including WMC member	Tama village
		Villagers	Including WMC member & village doctor	Punu village
		Villagers	Including village leader	Zongluguri village
		Villagers	Including village leader & woman WMC member	Dacuo village
Sunday, October 21	Shigatse	Dr Philippe Dufourg	Delegate	Swiss Red Cross
Monday, October 22	Shigatse Municipality	Mr Zhamdüi	Deputy Director	Shigatse Municipal Health Bureau
		Dr Tsamla	Village doctor	Qu Mei township clinic
		Dr Kelsang Pusuo	Village doctor	Na Er township and clinic
		Mr Tenzing Ouzhou	Township Governor	
		Mrs Tsamzhu	ACWF Delegate	

Date	Location	Name	Position	Organisation/Community
Monday, October 22 (cont)	Shigatse Municipality	Ms Labapamdou	ACWF Representative	Deqing village
		Mr Dorje	Village Leader	
		Mr Pema Tsering	Village doctor	Nadang village
		Dr Kelsang	Village Leader	
		Villagers	Including village leader & other WMC members	Jiangdang village
		Villagers	Including village leader, woman WMC member, & doctor.	Numree village
		Villagers	Including WMC members	Langsang Village
		Villagers	Including vice leader/ WMC member.	Shunchong Village
		Monks	–	Angon Monastery and village
Tuesday, October 23	Shigatse Municipality	Ms Datsam	Midwife	Qu Bu township clinic
		Ms Nyima Qusong	Midwife (part time)	
		Dr Tsamla	Village Doctor	Ding (Kangsha) village
		Mr Tongzhü	Village leader	
		Villagers	Including WMC members	Puga village
		Monks	Including WMC member	Puxia monastery
		Villagers	Including village leader & WMC members	Danggu village
		Villagers	Including vice-leader & woman WMC member	Jimuxiong village
		Mr Basa Tsering	Township leader	Qu Bu township
	Shigatse	Mr Dakwang	Vice Director	Shigatse Municipal Health Bureau
		Mr Tashi Tongdru	Deputy Director (Public Health)	Shigatse Municipal EPS
		Mr Wangzhu	Deputy Director (EPI)	Shigatse Municipal EPS

Date	Location	Name	Position	Organisation/Community
Wednesday, October 24	Shigatse	Dr Nyima	Acting Director	Shigatse Prefecture Health Bureau
		Mr Zhen Fan Ping	Headmaster	Shigatse Prefecture Professional Training School
		Mr Tenzin	Deputy headmaster (Health)	
		Mr Wangdu	Administrator	
		Mr Douje	Director	Shigatse Prefecture EPS
		Mr Tenzing Norbu	Vice Director (new)	Water Resources Bureau
		Ms Yu Yum Ding	Office Manager	
		Mr Nyema Jashi	Technician	
		–	Technicians	Prefecture EPC
Thursday, October 25	Shigatse Municipality	Ms Tsamla	Midwife	Dong Ga township
		Ms Lazhen	Clinic Manager	
		Mr Qimi	Village Leader	Jiamaqie village
		Mrs Songna	ACWF Representative	
		Mr Dawa	Village Leader	Zhugüi village
		Mrs Pamduo	ACWF Representative	
		Villagers	Including village leader/ WMC member.	Zangguo village
		Villagers	Including village leader & WMC members.	Jiamaqie village
		Villagers	Including village leader & WMC members.	Kaduo village
Friday, October 26	Shigatse	Mr Nyima Tsering	OIC, Dept. of Integrated Planning	Shigatse Prefecture WRB
		Mr Gahma	Vice Governor	Shigatse Municipal Government
		Mr Dorje	Vice Director	Shigatse City Health and Epidemic Prevention Bureau
		Mr Dakwang	Vice Director	Shigatse Municipal Health Bureau
		Mr Zhang Min Zhu	Former Water Engineer	Water Resources Bureau
		Mr Tenzin	Former Technician	Water Resources Bureau
		Dr Richard Hardiman	Project Director	EU-China Panam Integrated Rural Development Project

Date	Location	Name	Position	Organisation/Community
Saturday, October 27	Shigatse Municipality	Dr Tongzhu Tsering	Village doctor	Kungpolin village
		Dr Tsamqüi	Village doctor	Jiangdang township clinic
		Ms Dröla	Village midwife	
		Dr Tsering	Village doctor	
Monday, October 29	Lhasa	Ms Yu Zhen	Program Officer	Foreign Economy Administration Division, DOFTEC, Tibet
		Mr Xiro Wei Si	Director, EPS	Regional Health Bureau
		Mr Luo Sang	Vice Director, MCH	
		Ms Ngawang Drolma	Foreign Projects Officer	

APPENDIX VII SUMMARY OF INFORMATION FROM PROJECT WATER SUPPLY SCHEMES VISITED

Village	Dacuo	Zongluguri	Nadang	Tama	Punu	Longsang	Jiangdang	Numree	Shunchong	Puga	Puxia	Danggu	Jimuxiong	Zangguo	Jiamaqie	Kaduo
Township	Qu Mei Xiong	Qu Mei Xiong	Qu Mei Xiong	Bian Xiong	Bian Xiong	Jiang Dang	Jiang Dang	Jiang Dang	Jiang Dang	Nian Mu	Nian Mu	Nian Mu	Nian Mu	Dong Ga	Dong Ga	Dong Ga
Year completed	2000	1998/99	1998/1999	2000	2000	1998/99	1998/99	2001	2001	1998/99	2001	1998/99	2000	2000	1998/99	2000
Approx. population	110	450	890	650	135	140	500	620	210	370	240	320	320	590	290	330
Water source	Spring	?	?	Stream	Stream	?	?	Stream	Stream	?	Stream	?	Spring	Spring	?	Spring
No. of tapstands	2	6	13	12	2	2	6	7	4	5	6	3	4	13	3	4
Visited source ?	No	No	No	Yes	No	No	No	No	No	No	No	No	No	Yes	No	Yes
Visited reservoir ?	Yes	No	No	Yes	No	No	No	No	No	No	Yes	No	No	Yes	No	Yes
Are villagers satisfied with the water system?	Very supply partially failed.	Yes, until water	Very	Very	Very happy. back-happy tapstands	Very, but would like of water before.	Very. Had shortage	Yes.	Yes is wonderful.	Women think it		Yes	Very happy.	Very unhappy. System has not operated for 3 months.	Very happy.	Yes. System operates well.
Are villagers satisfied with the location of tapstands?	Yes	Yes	Yes	Yes	Originally asked for 1, project suggested 2.	Yes, except one is too shaded and takes a long time to thaw in winter	Yes, but shifting population means some households are now far from tapstands.	Yes. Tapstands could have had larger and longer drainage pipes.	Yes. Think design is excellent.	Location decision made by household heads. Women agree with locations.	Yes. Serves two villages (the upper includes a monastery) on a very steep hillside, with three tapstands in each.	Location decision made by household heads. Women agree with locations.	Yes. Villagers are moving their houses due to danger of flooding from new canal. 1 tapstand in old village, 3 in new.	Yes.	Location largely decided by women. Everyone happy except need one more tap stand for 8 families moved in by government.	Location determined by one member from each family. (About 50/50 men/women). Everyone is satisfied.
What difference has the water supply made?	Improved everyone's life. Improved hygiene. People wash clothes more often.	?	?	?	Women have more time. People are washing twice as much as before. Less diarrhoea and fewer patients in clinic.	More time. Elderly villagers find water easier to collect. People wash themselves and clothes more often. People from other villages come here to wash and drink.	The water is much cleaner. More personal washing. Less diarrhoea and colds.	Big difference in hygiene. People wash faces and hands much more. Less diarrhoea and colds	Easier to collect water. Water better quality. People wash more frequently.	Save time. Can collect more water. People wash more. Quality is much better. Always water available.	In monastery and villages it is now easier to collect water. Hygiene has improved.	Saves time. More convenient. People washing more. Children wash faces and hands more.	Gives more time. Makes life much easier for those collecting water. People wash more often. Families have less sickness.	When operating it was good, with cleaner water.	Saves time. Easier to collect. There is always water now anmd more is used. Helps hygiene. Before system even the animals had problem with water quality.	More convenient. Allows better hygiene. Cleaner water. Health of families has improved.
Water Committee?	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.	Yes.
Members (gender)	3 men/1 woman.	3 men/2 women.	3 men/1 woman/1 monk.	5 men/1 woman.	2 men/1woman.	3 men/1 woman.	4 men/2 women.	4 men/1 woman.	2men/1 woman.	3 men/2 women.	2 men/1 woman/1 monk.	4 men/2 women.	3 men/1 woman.	4 men.	2 men/1 woman.	3 men/1 woman.
Leader/Vice-leader on Committee?	Leader.	Leader.	?	Leader.	Leader.	Leader.	Leader.	Leader.	Vice-leader.	Leader.			Leader and Vice-leader.	Leader.		
Does the Committee meet regularly?	?	?	Yes, and gives talk on water system at every town meeting.	Yes.	Yes.	No.	Yes.	System new. Committee has met once.	System new. Committee has met.	Yes.	Committee has never met.	Yes.	Yes.	Committee has not met since system stopped.	Whenever small problem or when maintenance needed.	Met twice since opening of scheme.
What regular maintenance is undertaken?	Sedimentation tank is cleaned every 4 months.	?	One committee person is designated to clean the reservoir regularly.	Clean reservoir each month. Appointed people for cleaning each tapstand.	?	Regularly clean reservoir. Visit source in flood season.	One committee member responsible to keep each tapstand clean.	Nothing yet. Very long pipeline (6.25km).	Cleaned sedimentation tank once. Visited source and reservoir 3 times.	Visits source and reservoir once a month. Cleans reservoir monthly.	Monks responsible for intake, reservoir and tapstands in upper village. Regularly inspect source.	Regularly visit source and reservoir.	Visit source.	Visit source.	Clean reservoir every 2-3 months. Go to source at same time. Regularly clean around tapstands.	Clean reservoir. Check spring.
What repairs have been made to date?	None	Tapstands were rebuilt to better standard by project.	Had problem with air in line. Project fixed by installing extra air relief valve	Broken elbow inside tapstand repaired by committee.	Fixed problem caused by children. Fixed drainage at tapstands.	Villagers removed drainage pipe because it was often blocked. Tapstand flowing free because tap had been removed for repair 10 days ago.	Had problem with intake during floods. Project fixed it. Villagers repaired pipe in tapstand then rebuilt tapstand	Nothing yet. Very long pipeline (6.25km).	Have had a pipe break and another leak in tapstand. Both were successfully fixed.	Have fixed 4 breaks in pipeline. Have had to fix and replace taps. Nepal taps much better than Chinese ones.	No problems so far	Have bought new taps. Repaired strainer in reservoir. Still to decide about repairs to damaged and poorly built tapstands	Have repaired broken pipe.	Went to source, removed rocks at spring but found nothing wrong. Previous problem with damage caused by another village not served by system.	Have had to replace some taps. One tapstand flowing free because tap removed 10 days ago for repair and not replaced. Main pipe blocked in flood season.	No real problems.
Is there a Maintenance Fund?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	?	No. Will collect after busy period	Yes	No	Yes	Yes.	No. People too poor to contribute.	Yes.	Yes.
How much has been collected?	52RMB.	200RMB.	Had 800RMB but have now spent this on another village project. Will collect again soon.	Collected 304RMB from village but spent some on repairs.	Have bought padlocks and painted hatch covers.	110RMB but will collect more to buy new taps.	Collected 800RMB. Spent some but now over 1000RMB with interest added.	?		About 100RMB. Have not used fund.	extra to buy taps.	Have not used originally collected funds. Collected	About 280RMB.		290RMB. Have spent about 12RMB.	190RMB
Where is money kept?	Local business man who pays interest.	?		Township bank.	Committee.	Township bank.	Township bank.	?		Township bank.		Township bank.	Township bank.		Township bank.	Township bank.
Who will they contact if there is a major problem?	MWRB	MWRB	MWRB	?	MWRB	Technician in township.	Technician in township.	MWRB	MWRB	MWRB	MWRB	MWRB	MWRB	Have gone to township with problem. They contacted MWRB for help 3 months ago, but no response.	MWRB	MWRB
Are they aware of the spare parts?	Yes	No	?	No	No	No	No	No	No	No	No	No	Yes.	No	No	No
What is the state of the toolbox?	Reasonably complete.	Almost empty.	Complete. Held in monastery.	Partly complete.	Reasonably complete, in clinic.	Almost empty.	Almost complete.	Yes, but not seen by Team.	In village office, not seen by Team.	In leader's house. Fairly complete	In monastery. Seems complete	Fairly complete.	Kept in vice-leaders house. Fairly complete.	Most tools missing.	Fairly complete.	Appeared complete.
Do they have an O & M Manual?	Yes	Yes	Yes	Yes	?	Did not see it, but told about it	Yes	Yes, but not seen by Team. was in leader's house. Woman Committee Member did not know about manual.	In village office, not seen by Team.	In leader's house.	Yes	Yes. With water committee member.	Yes.	Yes	Yes	Yes
Do they have a System Folder?	Yes	Not seen.	Was in monastery.	Not seen.	Yes	In leader's house.	Yes, but incomplete. No plan or design info.	Yes, but not seen by Team.	In village office, not seen by Team.	Yes but incomplete. No plan or design information. Claimed these were in the school.	Yes	Yes, but very incomplete with no folder, plan or design.	?	Yes	Yes	Folder has little but agreement and plan.
General Comments.	Active village leader. Well managed scheme. Steel hatch covers rusting and disintegrating. Winter tapstand was full of water. Village leader hadn't managed to fix it yet.	Only 2 tapstands currently working. Contacted MWRB for help 2 months ago but no response. Some people have reverted to old water sources.	Have previously used funds to buy taps and some parts. Village very happy with whole consultative process and final result.	Drainage around some tapstands a problem. People are very happy with scheme. Serves main village and secondary village without problems.	Very appreciative of consultative process. All villages thank Australia. Village doctor active on committee.	Nothing wrong with removed tap except needed washer. Technical ability seems low. Water also used for growing vegetables and watering animals.	Some tapstands poorly constructed. Committee has bought cement to repair. Needs help from MWRB to investigate adding new tapstand to system.	Only opened 2 months ago. Excavated area behind tapstand never completed. Confident scheme will last because materials and supervision good. No idea what Australia's involvement was.	Confident committee can fix minor problems because of training.	Scheme serves two associated villages. Appears to be operating well. Village has built walls around tapstands as protection. This probably causes more ponding but may deter animals.	Difficult to install because of steepness of site. System working well. No step irons in deep valve chamber.	Some tapstands in fairly poor state of repair need fixing. WMC confident about ability to handle maintenance and minor repairs because of good training.	Tapstands sometimes freeze in winter for a period in the morning.	Weak leadership. People prepared to give 2 days labour to help repair. Taps missing off some tapstands. Reservoir needs cleaning. All lids useless because too flimsy. Possible damage because pipe goes through another village not served by system.	Villagers regularly help with maintenance work and also fixed blocked pipe. Committee needs help from MWRB to investigate providing additional tapstand for new arrivals in village. They could use materials in the store.	Generally in good shape. Committee appears active and capable.

APPENDIX VIII
EVALUATION TEAM MEMBERS

Dr Rob Condon, Public Health Physician (Team Leader)

Dr Liu Yunguo, Community Development & Rural Health Financing Specialist

Dr Len Rutledge, Water Supply Engineer

Dr Philip Fradd, AusAID Evaluation Specialist

Assisted by:

Mrs Yang La, Trilingual Interpreter

Mr Tenzin Kelsang, Trilingual Interpreter

Mrs Liu Lili, Project Officer, Australian Embassy, Beijing

Quality Assurance Series No. 29 February 2002

Water and Primary Health Care for Tibetan Villagers

The goal of the Tibet Primary Health Care and Water supply Project in the Tibet Autonomous Region of the People's Republic of China (PRC) was to strengthen and support the capacity of the Government of the PRC to deliver health services and supply water to the rural villages of the Municipality of Shigatse. The Project commenced in December 1997 and was completed in September 2001.

An independent evaluation of the Project in October/November 2001 found that, in spite of design limitations, the Project significantly strengthened the capacity of the Shigatse Municipality to deliver primary health care (PHC) services to the rural poor. Through its health promotion activities the Project also had a significant impact on the understanding by rural communities of key preventive health actions, not only in Shigatse Municipality but also in other areas of Tibet. The strong support of township and village level community leaders for health promotion activities contributed to the sustainability of those Project outcomes.

The technical depth of the Australian Managing Contractor, especially in PHC and health promotion, contributed strongly to the achievements of the Project.

The Project aim to construct 54 new water supply systems in rural communities was achieved, but the transfer or retirement of trained personnel, and limited resources for operations and maintenance, may diminish the long-term benefits of those and other water systems. There were substantial benefits to most villagers with improvements in hygiene and health and saving of time in water collection.

To maintain the sustainability of the benefits of the Project, it will be essential to upgrade Municipal Water Resources Bureau support for operations and maintenance of village water systems and training for village water management committees, and Health Bureau support for training of health workers and education of other community members.