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READER ON NEW TRENDS IN THE WATER AND SANITATION SECTOR

Papers presented at the Water Africa 94 Conference in Accra, 1-4 May 1994

SAWA/Dick Bouman

CONTENTS

NOTE: All papers were presented at the Water Africa Conference in Accra, 1-4 May 1994, except for the last one.
A review on the new trends has been written by Mr. Dick Bouman of SAWA in a separate report, titles "Review on new trends in the water and sanitation sector"
Sorry for the comments in the papers

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LES NOUVEAUX ENJEUX DE L'EAU ET DE L'ASSAINISSEMENT EN AFRIQUE DE L'OUEST

Le Programme d'alimentation en eau potable et d'assainissement PNUD - Banque mondiale

L'accès à l'eau potable et à l'assainissement est une condition indispensable pour vivre en bonne santé, pour disposer d'une meilleure qualité de vie, pour accroître le développement économique et pour conserver l'environnement. Toutefois plus de un milliard de personnes - en priorité la population pauvre des zones périurbaines, des bidonvilles et du milieu rural - sont démunis du plus élémentaire de ces services. Les conséquences économiques, sociales et environnementales sont bien entendu, énormes.

Entre 1 et 1,2 milliard de personnes n'ont pas accès à l'eau potable
1,7 milliard de personnes ne disposent pas d'équipements d'assainissement
La majorité de cette population vit en milieu urbain défavorisé

Améliorer l'accès de la population pauvre à une eau saine et à l'assainissement de manière durable est l'objectif prioritaire du Programme d'alimentation en eau et d'assainissement PNUD - Banque mondiale. Ceci nécessite la recherche d'approches nouvelles pour améliorer la fourniture des services de base, impliquant la mise en oeuvre d'options technologiques innovantes et de mécanismes institutionnels performants afin d'offrir un niveau de service adapté aux ressources et à la demande des usagers.

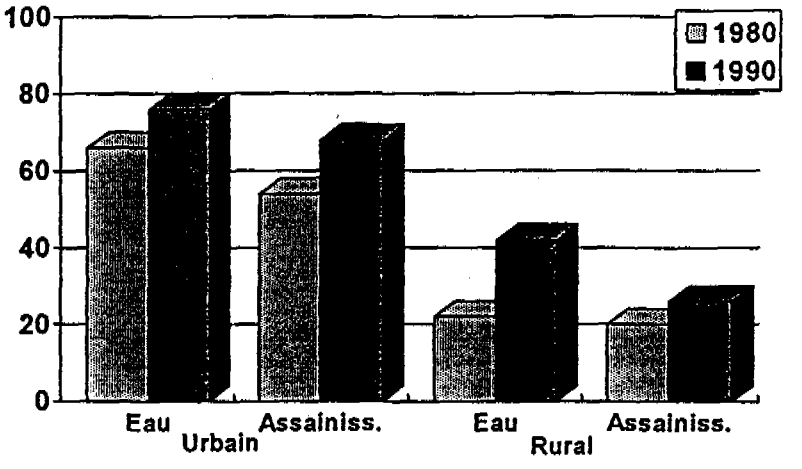
L'objet de ma présentation est de distinguer cette nouvelle approche, par rapport à l'ancienne approche, et de décrire les enjeux du secteur de l'eau et de l'assainissement tels qu'ils apparaissent aujourd'hui. L'ancien approche, utilisée par la plupart des Gouvernements et des institutions de développement se décrit en terme de couverture totale de la population en services adéquats d'eau potable et d'assainissement. La nouvelle approche consiste à mettre en place des mécanismes durables permettant de répondre à la demande réelle des communautés. Elle implique également de s'assurer que l'utilisation des ressources en eau est fiable à long terme, à la fois en termes de quantité et de qualité.

L'ancienne approche : vers la couverture des besoins

La figure ci-après présente la situation du taux de couverture en eau et assainissement en Afrique sub saharienne. Il est intéressant, en interprétant ces données de les considérer à la fois du point de vue du verre à moitié plein et du verre à moitié vide.

Si l'on considère le verre comme à moitié plein, on notera que des progrès importants ont été réalisés en terme d'accroissement des taux de couverture au cours des années 1980.

Accès à l'eau potable et à l'assainissement en Afrique en 1980 et 1990



Si l'on considère le verre commé à moitié vide, il est évident que le défi reste énorme. Il y a encore plus de 1 milliard de personnes qui n'ont pas accès à l'eau potable dans le monde et 1,7 milliard qui ne disposent pas d'équipement d'assainissement approprié. En Afrique sub-saharienne, du fait de l'accroissement démographique et malgré l'accroissement du nombre de personnes desservies, le nombre de personnes sans accès à l'eau potable a augmenté de près de 30 % en valeur absolue au cours des 10 dernières années.

Le coût du manque d'accès à l'eau et à l'assainissement sont des plus évidents en terme de souffrance humaine. Les chiffres que l'on peut obtenir à ce sujet sont confirmés de manière frappante par tous ceux qui visitent les zones urbaines défavorisées. Le coût social lié à l'absence d'eau et d'assainissement est particulièrement élevé. La population pauvre qui achète l'eau à des revendeurs payent souvent l'eau 10 fois plus cher ou plus que ceux, plus avantagés, qui bénéficie d'un branchement privé. Les conséquences sur la santé sont incalculables. On estime dans le monde, que deux millions de personnes meurent chaque année du manque d'accès satisfaisant aux services d'eau potable et d'assainissement.

Affection	Personnes affectées par la maladie (en millions)	Réduction moyenne attribuable à un accès amélioré à l'eau et l'assainissement
Maladies diarrhéiques	900*	22 %
Ascaridiose	900	28 %
Dracunculose	4	76 %
Schistosomiase	200	73 %

**se réfère au nombre d'épisodes par an*

La nouvelle approche :

L'ancienne approche basée sur l'amélioration des taux de desserte continue de poser de grands problèmes au niveaux technique, financier et institutionnel. Il

apparaît clairement que les objectifs d'un accès pour tous à l'eau potable et à l'assainissement pour l'an 2000 est maintenant un but hors de portée. Des projections montrent qu'il sera possible, au mieux, de maintenir le taux de desserte actuel compte tenu de l'évolution démographique et les ressources nécessaires affectées à l'entretien des systèmes existants.

Basé sur cette constatation, une nouvelle approche a commencé à voir le jour. Basée sur le concept de répondre à la demande réelle des populations, et non plus sur celui du besoin, cette approche prend en compte les contraintes environnementales qui se manifestent en terme de qualité et de quantité des eaux de surface et des eaux souterraines et sur l'environnement du milieu de manière générale.

Les enjeux en cours dans ce domaine sont énormes. Du point de vue du milieu aquatique, par exemple, la situation est particulièrement préoccupante. La proportion des eaux usées rejetées dans la nature en Afrique de l'Ouest et du Centre après traitement est proche de zéro. Les coûts peuvent être perçus de nombreuses manières. Les rivières et étendues d'eau à proximités des grandes villes ne sont guère plus que des cloaques fétides. Cela ne représente pas uniquement un gène esthétique mais constitue un réservoir pour le choléra et autres maladies d'origine hydrique. L'extension mal maîtrisées des villes implique une extension coûteuse des services de distribution d'eau potable. Plusieurs capitales d'Afrique, comme Dakar et Ouagadougou préparent des projets d'amélioration de leur approvisionnement en eau potable dont les captage sont situés à plusieurs dizaines de kilomètres, à des coûts bien évidemment très élevés.

Un dialogue intensif et l'échange d'informations sur les expériences en cours entre les gouvernements, les institutions de développement et les organisations non-gouvernementales, à travers de nombreux colloques internationaux comme celui-ci ont permis de dégager un large consensus parmi la plupart des acteurs impliqués dans le secteur sur les aspects essentiels du développement du secteur de l'eau et de l'assainissement :

- les problèmes environnementaux majeurs rencontrés par les communautés défavorisées, en milieu urbain et rural, sont directement liés à l'eau et à l'assainissement
- comprendre et répondre à la demande de la population doit être l'élément de départ de la conception des projets et des programmes
- l'eau doit être considérée en fonction de sa valeur économique, et non plus comme une ressource gratuite
- la participation des bénéficiaires est une composante essentielle pour assurer le succès durable des investissements réalisés
- les reformes institutionnelles sont généralement un préalable nécessaire pour obtenir des progrès tangibles dans le secteur

De nouvelles approches sont en cours dans l'ensemble des sous-secteurs : gestion des ressources en eau, alimentation en eau et assainissement en milieu urbain et rural. Il est désormais admis qu'il n'existe pas de solutions toutes faites et qu'une approche flexible et adaptive, basée sur des opérations pilotes doivent être mises en oeuvre.

Pour illustrer mon propos, je vais me concentrer la nouvelle approche dans deu domaines spécifiques auxquels le Programme PNUD - Banque mondiale pou l'eau et l'assainissement en Afrique de l'Ouest contribue : l'assainissement e milieu urbain et l'hydraulique rurale.

Une approche novatrice pour l'assainissement urbain

La nouvelle approche est différente de celle retenue dans de nombreux plans directeurs élaborés dans le passé. Elle met en oeuvre une planification qui n'est plus comprise comme un nombre d'ouvrages à réaliser mais comme la mise en place de mécanismes durables permettant de répondre à la demande des communautés. L'horizon de planification est relativement court (10 à 15 ans); l'accent est mis sur les actions immédiates à entreprendre définies à partir des communautés de base.

En matière institutionnelle le principe de base est la décentralisation du processus de décision et une claire répartition des responsabilités entre les acteurs; si la puissance publique exerce effectivement ses responsabilités essentielles en matière de planification, les tâches d'exécution sont privatisées (entreprises, artisans, groupements associatifs)

En matière de financement les niveaux de services rendus sont liés au paiement par les usagers des services effectivement rendus; la promotion de l'assainissement s'appuie sur la vérité des prix et sur des mécanismes de financements transparents afin que les usagers prennent en charge les coûts de fonctionnement et d'amortissement.

En matière technologique plusieurs options sont étudiées; le choix des standards doit prendre en compte la demande effective des usagers et aussi un pourcentage maximum de population à desservir. Enfin les propositions technologiques doivent réduire de façon importante l'impact sur l'environnement.

Les points forts de cette nouvelle approche sont mis en évidence dans le tableau suivant:

ANCIENNE APPROCHE	NOUVELLE APPROCHE
Programme défini "d'en haut" ♦ intervenants extérieurs ♦ autorités nationales ♦ départements techniques plus ou moins décentralisés	**Décentralisation du processus de décision** ♦ être à l'écoute des différents échelons ♦ gestion concertée du programme ♦ renforcement des compétences nationales ♦ appui ponctuel de consultants nationaux et internationaux
Unicité des sources de financement (financements extérieurs) ♦ approche projets ♦ multiplicité des stratégies ♦ coûts récurrents dépassant les capacités nationales	**Identification et mise en valeur des ressources nationales** ♦ approche s'appuyant sur la demande et la volonté de participer ♦ recherche pour réduire les coûts ♦ recouvrement des coûts
Travaux réalisés par des entreprises internationales ♦ grands marchés de travaux	**Promotion du secteur privé national ou sous régional** ♦ réduction de la taille des marchés de travaux ♦ appui à la gestion administrative et financière
Uniformité de l'approche ♦ une solution unique ♦ une échelle d'espace ♦ une échelle de temps	**Approche différenciée** ♦ une gamme de solutions techniques ♦ propositions différentes selon la communauté concernée ♦ propositions pouvant évoluer dans le temps

Les enjeux de l'assainissement urbain

Le succès à long terme de cette nouvelle approche n'est cependant assurée que si un certain nombre d'enjeux sont partagés par l'ensemble des partenaires:

Cette nouvelle approche s'inscrit dans *le cadre institutionnel de la décentralisation du processus de décision* où chacun des partenaires a un rôle à jouer, devra être entendu et impliqué dans le processus de décision. Au niveau national, ce processus de concertation se fait entre trois pôles: la communauté, le secteur public et le secteur privé. Chacun de ces pôles présentent des limites et doit travailler en partenariat pour assurer la viabilité à long terme et la replicabilité des actions. Les communautés sont rapidement démobilisées et leur intérêt diminue avec les ajournements successifs de la mise en oeuvre; chaque communauté est centrée sur son quartier, son espace immédiat et elle ne peut affronter seule les problèmes techniques ou légaux posés par l'exécution d'un programme, ce qui confirme la nécessité de la collaboration avec les autres acteurs. L'image des acteurs publics doit être améliorée à la fois pour la gestion

des services publics et pour permettre au secteur privé de jouer un rôle effectif dans la fourniture des services. Cependant ce processus de concertation rencontre bien des obstacles dans sa mise en oeuvre. Les conflits entre les groupes d'intérêts dans la sphère des communautés sont fréquents et l'identification des interlocuteurs représentatifs est le plus souvent une étape longue et difficile. Dans la sphère des acteurs du public la décentralisation de la maîtrise d'ouvrage entre l'échelon national et l'échelon municipal, par exemple, est aussi source de conflits. Les modalités de communication entre les différentes sphères ne sont pas toujours faciles .

Un des objectifs important de la nouvelle approche est l'appropriation par les nationaux du processus de planification stratégique. Cette appropriation devrait aboutir à *une nouvelle forme de partenariat entre les institutions nationales et les bailleurs* et devrait permettre d'appliquer une politique uniforme sur l'ensemble de l'espace national et d'obtenir une approche coordonnée des partenaires extérieurs (bailleurs et ONG actifs dans le secteur) pour le soutien financier à un programme de développement plutôt qu'à des projets géographiques ou sectoriels aux objectifs et aux modes d'exécution souvent différents.

Le renforcement de l'échelon municipal apparaît très important dans ces nouvelles modalités de coopération entre les différents acteurs institutionnels et les communautés. Ce renforcement porte surtout sur les tâches de maîtrise d'ouvrage. C'est sans doute l'échelon le plus approprié pour organiser la concertation entre les autres acteurs de la sphère publique et les populations. La création de mécanismes financiers durables (perception - gestion - services rendus) est aussi un élément important afin de construire la confiance entre les municipalités et les populations.

La reconnaissance des *populations comme acteur à part entière* est un autre enjeu de cette nouvelle approche. En fait le choix final du type de service à fournir est du ressort des futurs usagers; il s'agit de mettre en oeuvre une approche basée sur la demande effective et de répondre à celle-ci par une offre adéquate. Dans un contexte urbain le plus souvent les populations connaissent "les produits" ou peuvent comprendre rapidement les avantages et les inconvénients de ces derniers. C'est donc beaucoup plus sur des systèmes d'information ayant pour cible les communautés qu'il faut travailler aujourd'hui. L'objectif est, ici aussi, l'appropriation par les communautés des équipements construits afin d'en assurer la viabilité à long terme. Cet objectif va de pair avec la promotion de relations contractuelles directes (contrat communautaire) entre les usagers et les prestataires privés de services. Bien sûr, cette nouvelle approche multiplie les petits programmes qu'il faudra gérer et l'identification des types de formation à développer ainsi que les personnes ou populations cibles à former devront tenir compte des préoccupations des usagers et répondre à une véritable demande.

Une nouvelle stratégie pour l'hydraulique rurale

Les lignes directrices des futurs projets d'hydraulique villageoise devront reposer sur les principes suivants:

- Promotion d'un système fiable à long terme;
- Décentralisation du processus de décision;
- Développement des ressources humaines;
- Participation des communautés à la gestion des points d'eau;
- Promotion du secteur privé national;

- Réduction des coûts des ouvrages;
- Assainissement et éducation pour la santé.

Promotion d'un système fiable a long terme

Le système proposé devra permettre aux bénéficiaires de poursuivre l'action entreprise au-delà de la durée du projet initiateur du processus. Avant d'accorder un crédit ou un don, il faudra donc s'assurer que la préparation du projet correspondant a prévu les conditions préalables à l'application de ce principe. La première action après la signature des accords de financement sera d'informer convenablement les bénéficiaires et les intervenants extérieurs au milieu pour s'assurer que les buts du projet ont été compris de tous. La réussite d'un programme d'hydraulique villageoise et d'assainissement ne devra plus être évaluée seulement en terme de réalisations physiques mais plus concrètement en terme d'évidence de l'utilisation des équipements après le retrait des interventions extérieures au milieu. Les équipements et services doivent donc être socialement acceptés afin que les bénéficiaires leur assurent une fiabilité à long terme.

Décentralisation du processus de décision

Les premiers programmes d'hydraulique villageoise ont eu recours à des listes dressées par l'administration centrale pour réaliser des points d'eau. En dehors des puits, les autres moyens d'exhaure étaient alors peu connus des futurs bénéficiaires. De même, l'utilisation des pompes et la construction des latrines étaient très limitées en Afrique sub saharienne. A présent le contexte a changé: les utilisateurs potentiels connaissent le "produit", ils ont compris les avantages et les inconvénients des systèmes disponibles. La volonté politique de décentralisation des organes exécutifs à laquelle on assiste dans la région devrait s'appliquer à un ensemble de secteurs, dont celui de l'alimentation en eau et de l'assainissement en zone rurale. Cette décentralisation du processus de décision devrait permettre une approche basée sur l'étude de la **demande** effective et de répondre à celle-ci par une **offre** adéquate. Le choix final du type d'ouvrage, du moyen d'exhaure et des services à fournir sera du ressort exclusif des futurs usagers.

Développement des ressources humaines

De récentes expériences ont démontré que les populations des zones rurales étaient parfaitement capables d'assurer intégralement le financement de la réalisation de certaines infrastructures quand il existait une véritable convergence d'objectifs au niveau de la communauté et une forte volonté à changer la situation antérieure à la réalisation. Les futurs projets devront identifier les priorités des bénéficiaires, être à l'écoute des préoccupations des futurs usagers, répondre à une véritable demande, évaluer la volonté et la capacité de payer ce type de services et soutenir les initiatives locales en matière d'alimentation en eau et d'assainissement.

Une réelle prise en charge par les bénéficiaires des équipements installés passe nécessairement par leur formation à l'utilisation et à la gestion. Les programmes de formation devront être repensés en fonction de la nouvelle approche stratégique et accorder une large place aux méthodes participatives. Cette formation devra prévoir des actions avant l'installation, mais aussi après, de manière à faciliter un démarrage harmonieux et la consolidation des acquis. Ce volet formation pourrait être confié à des ONG déjà actives dans les régions

concernées et aptes à poursuivre les actions d'une manière autonome dans la phase post-projet.

Participation des communautés a la gestion des points d'eau

L'objectif à court terme est de bannir toute forme de projets offrant des services, des équipements ou des matériaux sans contrepartie substantielle de la part des bénéficiaires. L'expérience de la décennie de l'eau a prouvé que les projets "tout cadeau" n'avaient absolument rien apporté au monde rural et qu'ils avaient même parfois eu des effets pervers.

L'objectif à moyen terme est l'acquisition, par les communautés, sans aucune contribution extérieure, de leur moyens d'exhaure et du financement intégral des ouvrages d'assainissement. Cet objectif va de pair avec la promotion de relations contractuelles directes entre les usagers et les prestataires privés de services et de travaux.

L'objectif à long terme est la prise en charge totale, par les communautés concernées, de la gestion des projets du secteur.

Promotion du secteur prive national

Avec le désengagement progressif de l'Etat des tâches d'exécution, la réalisation physique des ouvrages sera entièrement confiée à l'avenir à des structures privées. En dehors du secteur informel, très actif mais peu ou prou organisé, les futurs projets devront susciter un véritable intérêt financier auprès des petites et moyennes entreprises locales. Cette privatisation d'un grand nombre d'activités du secteur devra s'accompagner de mesures d'aide à la gestion et à l'organisation des intervenants du secteur privé impliqués dans les projets. Par ailleurs, le çadre juridique dans lequel évolueront les PME impliquées dans ce secteur devra être rendu plus favorable au développement harmonieux de leur activités économiques. Le cadre institutionnel devra avoir un caractère promotionnel incitatif.

Réduction des coûts des ouvrages

Les coûts unitaires de construction des ouvrages du secteur sont nettement plus élevés en Afrique de l'Ouest que dans d'autres régions du monde. Cette situation est due aux distorsions des marchés correspondants. La taille des marchés actuels de forages (400 à 500 unités) écarte de facto les entreprises locales de la compétition et assure un quasi-monopole aux grandes entreprises étrangères ayant des charges récurrentes élevées. De plus, les techniques de forages, héritées de la recherche pétrolière, mettent en oeuvre des moyens souvent surdimensionnés par rapport aux besoins nécessaires. Les pompes à motricité humaine sont achetées par lots importants, au gré des financements, ce qui rend difficile l'installation spécifique d'un type précis de pompe sur un site ayant un contexte technique bien défini. De même, du fait de la répartition géographique des financements, les projets n'ont souvent pas pu présenter un éventail suffisant de choix techniques pour résoudre les problèmes du secteur dans une région donnée (uniquement forages, ou uniquement mini-adductions, etc.): on n'a donc pas toujours pu offrir la solution technique la plus rationnelle ni économiquement la plus adaptée à la situation.

La réduction des coûts des ouvrages passe par le redimensionnement de la taille des marchés de travaux et de services, par la mise en oeuvre de techniques adaptées aux besoins des zones rurales et par la possibilité d'offrir un vaste choix

de solutions pour répondre à la demande d'ouvrages et/ou de services en eau et assainissement.

Assainissement et éducation pour la santé

Un des enseignements de la décennie de l'eau concerne le manque d'intégration des programmes d'hydraulique villageoise dans le cadre étendu des infrastructures rurales et en particulier dans celui de l'assainissement.

A l'avenir, les projets d'alimentation en eau potable et d'assainissement devront être étroitement liés. Les infrastructures correspondantes devront constituer un ensemble cohérent assimilant ces deux types de services. La motivation des bénéficiaires sera renforcée par des programmes d'animation/sensibilisation qui auront recours à des actions d'éducation pour l'hygiène et la santé.

Pour concrétiser cette approche, la rédaction des documents de projet devront être le fruit d'une réflexion pluridisciplinaire faisant intervenir des spécialistes de différents horizons.

Conclusions

Nous avons maintenant suffisamment de recul pour mieux comprendre quels sont les enjeux du secteur.

Tout d'abord, il est nécessaire d'achever l'ancienne approche. Le nombre de personnes qui ne bénéficient pas de services appropriés d'eau et d'assainissement reste inacceptablement élevé et tout doit être entrepris pour faciliter l'accès à ces services. Toutefois, du point de vue financier, cela nécessite des efforts considérables et il est clair qu'un partie importante de ces coûts pourra et devra provenir des usagers directement. Cela signifie également que la priorité doit être donnée à la mise à disposition de services que la population souhaite et pour lesquels elle est prête à payer. Par dessus tout, cela implique un changement d'attitude des planificateurs qui devront prendre en compte les besoins des ménages tels que les ménages eux-mêmes les voient. De nouveaux modes de gestion institutionnelle du secteur doivent être développés afin d'identifier et de fournir des services au moindre coût et de manière à répondre de manière fiable à la demande des usagers. Cela implique de définir de nouveaux partenariats entre les usagers et les autorités publiques et d'associer de manière plus importante le secteur privé, formel ou informel.

Ensuite, il faut commencer à mettre en oeuvre les nouvelles approches. Le défi pour les pays en développement est énorme. Tout d'abord, il y a à compléter l'ancienne approche et à accroître les taux de desserte, ce qui va continuer à nécessiter des investissement importants. Ensuite, les pays en développement devront se préoccuper de la dégradation constante de l'environnement, en particulier du milieu aquatique, pour lequel très peu de ressources ont été allouées jusque là. Cela signifie clairement que les pays en développement et ceux qui les soutiennent devront faire des choix clairs sur les priorités à retenir.

Ma présentation à indiqué quelques orientations en direction desquelles il y a encore beaucoup à apprendre. Il est en particulier nécessaire d'associer les communautés aux décisions à prendre, et cela au plus bas niveau possible. Il est important également de considérer l'eau en fonction de sa valeur économique. Les travaux de cette réunion devrait permettre d'avancer dans la définition de ces nouvelles approches qui permettront d'améliorer les conditions de vie des populations défavorisées tout en respectant de manière durable l'environnement.

WESTERN AFRICA WATER & ENVIRONMENT CONFERENCE

INTEGRATED URBAN SANITATION PLANNING AND MANAGEMENT

(EVOLVING TRENDS AND LESSONS FROM WEST AFRICA)

Sanitation
Strategic Planning
Sanitation Systems Plan

by

Ato Brown
(UNDP-WORLD BANK WATER AND SANITATION PROGRAM)

2-5 MAY 1994
LABADI BEACH HOTEL, ACCRA, GHANA

INTEGRATED URBAN SANITATION PLANNING AND MANAGEMENT
EVOLVING TRENDS AND LESSONS FROM WEST AFRICA

**********OUTLINE OF PRESENTATION**********

- THE PROBLEM SITUATION - THE GROWING URBAN DILEMMA
- EVOLVING CHARACTER OF THE SSP APPROACH METHODOLOGY IN WEST AFRICA
- COUNTRY SPECIFIC OBSERVATIONS
- THE PROPOSED SOLUTION - THINK HOLISTIC - THE SSP APPROACH
- IMPLICATIONS OF ADOPTION
- FOOD FOR THOUGHT - LESSONS LEARNT
- CHALLENGES

PROBLEM SITUATION
THE GROWING URBAN DILEMMA

CHARACTERISTICS (democratization)

- POOR AND NON-PERFORMING ECONOMIES
- WEAK AND INADEQUATE INSTITUTIONAL FRAMEWORK
- HIGH GROWTH RATE AND INCREASED URBANIZATION

CONSEQUENCES

- INADEQUATE SERVICES AND MANAGEMENT INFRASTRUCTURE
- CONDITIONING OF HABITS AS A RESULT OF POOR ENVIRONMENT
- WEAK RESPONSES TO COMMUNITY NEEDS

EVOLVING CHARACTER OF THE SSP APPROACH IN WEST AFRICA

- 1989-90: KUMASI - EXCRETA MANAGEMENT
- 1990-91: OUAGADOUGOU - EXCRETA AND WASTE WATER MANAGEMENT
- 1992-93: CONAKRY - EXCRETA, WASTE WATER AND SOLID WASTE MANAGEMENT (air pollution, soil degradation)
- 1994-95:OUAGADOUGOU, CONAKRY AND BISSAU - IMPLEMENTATION OF INTEGRATED APPROACH INCL. WATER SUPPLY WITHIN CONTEXT OF URBAN DEV'T

Planning

EVOLVING CHARACTER OF THE SSP APPROACH IN WEST AFRICA

1989-90: KUMASI - EXCRETA MANAGEMENT

PIONEERING OF WTP METHODOLOGY
USE OF NATIONAL PROFESSIONALS (CITY LEVEL)
FIRST STAGE IMPLEMENTATION
- TWIN PIT VIPs (250 UNITS, COVERAGE - 7,500)
- SIMPLIFIED SEWERAGE (320 HOUSES, COVERAGE - 15-20,000)
- PUBLIC LATRINES (REHAB. OF 3 UNITS, MGT PRIVATIZATION IN CBD)

INTRODUCTION OF THE PRIVATE SECTOR IN SERVICES DELIVERY
COST RECOVERY METHODS: LOAN SCHEME + SUBSIDY+USER CHARGES
SPIN OFFs
- FRANCHISED MANAGEMENT OF MOST PUBLIC LATRINES IN GHANA +
- FAVOURABLE RESPONSE FROM IDA FOR FULL SCALE PROJECT
- INCREASED PRIVATE SECTOR ROLE IN WASTES MANAGEMENT
- MOBILIZATION OF RESOURCES FOR ALL MAJOR CITIES (IDA/KFW)
- REQUEST BY GOV'T FOR NATIONAL WASTES MANAGEMENT POLICY

1990-91: OUAGADOUGOU - EXCRETA AND WASTE WATER MANAGEMENT

IMPROVEMENT OF WTP METHODOLOGY
USE OF NATIONAL PROFESSIONALS (NATIONAL LEVEL)
FIRST STAGE IMPLEMENTATION
- REHAB. OF EXISTING LATRINES (270 UNITS)
- NEW HOUSEHOLD TWIN PIT VIPs (180 UNITS)
- HOUSEHOLD SOAKAWAYS/BATHROOMS (390/200 UNITS)
- STRONG PROMOTION AND MARKETING

INTRODUCTION OF PRIVATE SECTOR IN SERVICE DELIVERY
COST RECOVERY METHODS: USER DEPOSIT+SUBSIDY (SURTAX ON WATER)
SPIN OFFs
- INCREASED DEMAND FOR EXPANSION OF PILOT PROJECT
- DONOR COLLABORATION IN SCALING UP OF IMPLEMENTATION

1992-93: CONAKRY - EXCRETA, WASTE WATER AND SOLID WASTE MANAGEMENT

APPLICATION OF MODIFIED WTP METHODOLOGY
USE OF NATIONAL PROFESSIONALS (CITY AND NATIONAL LEVEL)
FIRST STAGE IMPLEMENTATION (AS DESIGNED)
- IMPROVEMENT OF HOUSEHOLD LATRINES
- COMMUNITY BASED SOLID WASTE COLLECTION
- HOUSEHOLD WASTE WATER DRAINAGE AND DISPOSAL
- STREET DRAINAGE AND PAVING
- ENHANCEMENT OF COMMUNITY ENVIRONMENT

INTRODUCTION OF PRIVATE SECTOR IN SERVICE DELIVERY
SPIN OFFs
- PREPARATION OF SSPs FOR SECONDARY CITIES
- COMPREHENSIVE FULL SCALE PROJECT FOR CONAKRY (IDA)
- INCREASE COLLABORATION WITH DONOR FOR SCALING UP

1994-95: OUAGADOUGOU, CONAKRY AND BISSAU - IMPLEMENTATION OF INTEGRATED APPROACH INCL. WATER SUPPLY WITHIN CONTEXT OF URBAN DEV'T

COUNTRY SPECIFIC OBSERVATIONS

GHANA - KUMASI

OPPORTUNITIES
ALL PROJECT STAFF FROM CITY DEPARTMENTS - CONTINUITY ASSURED
SANITATION FUND CREATED TO CONTINUE AFTER TERMINATION OF PROJECT
DECENTRALIZE ADMINISTRATION - NEED ONLY ONE SIGNATURE/ENDORSEMENT
PRESENCE OF ACTIVE REPRESENTATION AT THE COMMUNITY LEVEL
CITY HAS A TAXABLE BASE
ACTIVE AND GROWING PRIVATE SECTOR

CONSTRAINTS
DEMAND STUDY SUGGESTED 50% SUBSIDY - SUSTAINABILITY IN DOUBT
MERIT OF SUBSIDY REST ON PUBLIC HEALTH AND ENVIRONMENTAL CONCERNS
LOAN SCHEME RESULTS - RECOVERY RATE 60%, CUMBERSOME TO ADMINISTER
INSTITUTIONAL REFORMS SLOWED DONE BY POLITICAL TRANSITION

BURKINA FASO - OUAGADOUGOU

OPPORTUNITIES
PRESENCE OF KEY INSTITUTION "ONEA" AND SANITATION SURTAX ON WATER
REASONABLY QUALIFIED NATIONAL PROFESSIONALS IN PROJECT TEAM
PRESENCE OF A MIX OF INFORMAL/PRIVATE SECTOR ACTORS

CONSTRAINTS
CITY ADMINISTRATION HARDLY INVOLVED
IMPLICATIONS OF STRETCHING THE SANITATION SURTAX
PARALLEL PLANNING FOR EXCRETA AND SOLID WASTE MANAGEMENT
PROBLEMS OF UTILIZATION OF METHODOLOGY AND RESULTS OF WTP STUDIES

GUINEA - CONAKRY

OPPORTUNITIES
PRESENCE OF A CORE TEAM NOW TRAINED FOR THE FUTURE
ACTIVE INFORMAL SECTOR IN LATRINE CONSTRUCTION - 90% COVERAGE

CONSTRAINTS
POLITICAL SITUATION - OVER CENTRALIZATION OF" EVERYTHING"
MOST PROJECT STAFF RECRUITED FROM OUTSIDE THE CITY - CONTINUITY?
SCRAMBLE FOR CONTROL BY MINISTERIAL DEPARTMENTS VIS-A-VIS AUTHORITIES
ANTICIPATED PROBLEM OF INSTITUTIONAL FATIGUE AND INERTIA

THE PROPOSED SOLUTION
THINK HOLISTIC - THE SSP APPROACH

- BEGIN WITH A COMPREHENSIVE SITUATION ANALYSIS
- TAKE INTO CONSIDERATION ALL ASPECTS OF URBAN SANITATION
- ESTABLISH A SUSTAINABLE INSTITUTIONAL/IMPLEMENTATION FRAMEWORK
- SELECT FIRST STAGE/FULL SCALE PROJECT(S) BASED ON EXPRESSED NEED AND DEMAND OF BENEFICIARY COMMUNITIES
- DETAIL OUT INSTITUTIONAL AND FINANCING OPTIONS FOR RESPECTIVE COMPONENTS
- IMPLEMENT PROJECT(S)
- FEEDBACK LESSONS AND SCALE UP

Demand Studies

THE PROPOSED SOLUTION
THINK HOLISTIC - THE SSP APPROACH

BEGIN WITH A COMPREHENSIVE SITUATION ANALYSIS

Strength
Constraints
Opportunities

- SETTLEMENT CHARACTERISTICS
- DEMOGRAPHIC FEATURES
- REVIEW OF STATUS OF SERVICES
  - WATER SUPPLY
  - EXCRETA MANAGEMENT
  - WASTE WATER MANAGEMENT
  - INDUSTRIAL WASTE MANAGEMENT
  - SOLID WASTE MANAGEMENT
  - PUBLIC HEALTH AND ENVIRONMENT
- ASSESSMENT OF INSTITUTIONAL ARRANGEMENTS
- CARRY OUT TECHNOLOGY REVIEW FOR ALL ASPECTS OF SANITATION

ESTABLISH DEMAND FOR IMPROVED SERVICES USING WTP METHODOLOGY

- VALIDATE DEMOGRAPHIC INFORMATION AND STATUS OF SERVICES
- GET A SENSE OF WHAT USERS WANT
- DETERMINE WTP THRESHOLD FOR IMPROVED SERVICES

DETERMINE FINANCIAL REQUIREMENTS AND FINANCING SYSTEMS

DESIGN APPROPRIATE INSTITUTIONAL ARRANGEMENT

PROCEED WITH INTENSIVE DIALOGUE, CONSENSUS BUILDING AND RESOURCES MOBILIZATION

DESIGN IMPLEMENTATION STRATEGY AND FIRST STAGE PROJECT

IMPLEMENT FIRST STAGE PROJECT

FEEDBACK RESULTS AND LESSONS

REVIEW STRATEGIES AND IMPLEMENTATION ARRANGEMENTS

- REVIEW DEMAND AND WTP FOR SERVICES
- RE-ASSESS INSTITUTIONAL ARRANGEMENTS
- RE-DEFINE IMPLEMENTATION STRATEGY
- SET NEW PRIORITIES FOR INVESTMENTS BASED ON DEMAND FOR SERVICES

PREPARE FULL SCALE PROJECT

MOBILIZE RESOURCES AND SCALE UP IMPLEMENTATION

IMPLICATIONS OF ADOPTION

- REQUIREMENT OF HIGH LEVEL OF PROFESSIONAL COMPETENCE (Demand study & complicated)
- MULTI-FACETED AND COMPLEX ANALYSIS INVOLVED
- PLANNING PROCESS NOT SUSTAINABLE WITHOUT ESA SUPPORT Scale down!
- SCARY LEVELS OF INVESTMENTS - DONOR SCARE

FOOD FOR THOUGHT - LESSONS LEARNT

- WORK AT THE URBAN DECISION MAKING LEVEL (DECENTRALIZATION)

- THE NEED TO WORK WITH COUNTRY TEAM PREFERABLY FROM THE CITY

  - CONTINUITY
  - INSTITUTIONAL MEMORY
  - OPPORTUNITIES FOR HANDS-ON HUMAN RESOURCE DEVELOPMENT

- GLOBAL INSTITUTIONAL ARRANGEMENTS SHOULD ARTICULATE SHARED MANAGEMENT CONCEPT (CLEAR DEFINITION OF ROLES AND RESPONSIBILITIES AND PARTNERSHIP ARRANGEMENTS BETWEEN PUBLIC INSTITUTIONS/PRIVATE SECTOR/BENEFICIARIES)

- PLANNING ACTIVITIES AND OVERALL MANAGEMENT PROCESSES CONCERNING URBAN SANITATION SHOULD BE INTEGRATED AND SHOULD BE LEAD BY ONE FOCAL CITY LEVEL DEPARTMENT

- GO AT THE SPEED OF THE BENEFICIARY INSTITUTION(S)

- IMPLEMENTATION SHOULD RESPOND TO CAPACITY AND DEMAND OF USERS

- DEMAND ORIENTATION SHOULD BE THE BASIS OF INVESTMENT SELECTION

- BUILD ON EXISTING OPPORTUNITIES

- SANITATION IMPROVEMENTS SHOULD BE WITHIN THE CONTEXT OF A GLOBAL URBAN DEVELOPMENT AND MANAGEMENT STRATEGY

CHALLENGES

- COMPLEXITY OF PLANNING PROCESS
- SEARCH FOR BETTER AND SIMPLER METHODOLOGIES OF CARRYING OUT MULTI-DIMENSIONAL DEMAND STUDIES
- HOW TO BREAK-UP THE STRANGLEHOLD OF GOVERNMENT MINISTRIES AND PUT IN PLACE A CORE PLANNING AND IMPLEMENTATION TEAM AT THE CITY LEVEL
- CHANGING THE CHARACTER OF SECTOR INSTITUTIONS TO RESPOND TO FACILITATING ROLE AND PARTNERSHIP BUILDING
- DEVELOPMENT OF IMPREMENTATION APPROACH FOR MULTI-DIMENTIONAL IMPROVEMENTS
- APPROPRIATE METHODOLOGIES/INDICATORS FOR LESSONS CAPTURING
- IMPROVING CAPACITY FOR OVERAL URBAN PLANNING AND MANAGEMENT

TOWARDS SUSTAINABILITY AND ACCELERATED GROWTH IN THE WATER SECTOR IN GHANA

(A Keynote Address Delivered By Mr. E.K.Y. Dovlo, Ag. Managing Director of the Ghana Water and Sewerage Corporation (GWSC) During Water Africa '94 Conference on May 2, 1994)

1.0 BACKGROUND

1.1 The Country

Ghana has a tropical climate with mean rainfall varying from 2000mm in the south-West coastal area to about 350mm in the east coastal area and 1000mm in the North. Depending on the season and time, daily tempearatures range between 20oC and relative humidities between 20 and 90. The country has a land area of 238,537 sq km and an estimated population of 15.5 million. Population growth rate is about 2.6% per annum. About 67% of the population live in communities with less than 5000 people, regarded as rural areas.

2. Life expectancy is 55 years. Access to safe water and adequate sanitation are 57% and 30% respectively. Over the past few years the GNP per capital averaged US$440.

3. The country is divided into ten regions which are further sub-divided into 110 districts administered by district assemblies. The country is administered by a central government with its seat in the capital city, Accra.

4. In 1983, the Government launched an economic recovery programme to arrest a steady deterioration in the country's economic policies experienced since 1976. As a result of the sound macro-economic policies pursued by the Government since 1983, annual average growth rate in GDP is about 5% with the services sector performing a little better than average. Many of the state owned enterprises have been restructured and are performing better having signed performance contracts with the Government.

5. The economy of Ghana is heavily dependent on agriculture, which contributes about 40% of gross national product in recent years. About 57% of the economically active population is engaged in agriculture. Farming is largely done by peasant farmers. Cocoa had been the mainstay of the economy and contributed about 12% of gross domestic product and 60% of export earnings. However, recently, gold has taken over the lead.

1.2 Water Resources

6. The country is endowed with adequate surface water resources to meet its identifiable needs. It is estimated that of the total volume of water which flows in the rivers, only 2% is used for water supply. Though the water resources are adequate, they are unevenly distributed. They are abundant along the Volta River and Lake but limited in the north and south-east where rainfall is considerably less.

7. The quality of surface water is generally satisfactory with pollution caused mainly by soil erosion resulting from heavy rains and the discharge of domestic, agricultural and industrial wastes to a limited extent. There is high incidence of water-borne and water related diseases like guinea worm, bilharzia and onchocerciasis hence most of the country's surface water sources are unsafe for domestic use unless treated.

8. Ground water resources are also available in reasonable quantities with more than 80% of the area of Ghana underlain by water bearing rocks. High yielding rocks can be found in the western, upper, eastern and southern parts of the country whilst the remaining parts have yields that can support mainly hand-dug wells and handpumped boreholes.

9. Groundwater is generally of acceptable quality requiring only disinfection to render it suitable for potable use. However in the south western, central and south eastern parts of the country, the presence of high levels of minerals like calcium, magnesium, iron and manganese in some boreholes renders the waters hard or coloured requiring treatment before supply.

1.3 Sector Institution

10. The Ghana Water and Sewerage Corporation (GWSC) is the sector institution responsible for the development, operation and management of water supply and sewerage services for domestic, public commercial and industrial purposes in Ghana. It was created by an Act of Parliament (Act 310) in 1966.

11. The Corporation is administered from its Head Office in Accra and ten regional offices in the regional capitals. It is decentralised to the district level. It operates under the general direction of the Ministry of Works and Housing. It is governed by an eleven-member Board of Directors chosen from various spheres of life and professions. The Board is responsible for formulating policies and controlling programmes of the Corporation.

1.4. Sector Evolution

12. Public water supply started in Ghana in 1928. There were 35 piped water supply systems in the country when Ghana became independent in 1957. In a bid to promote rapid national development after independence, the government launched a crash programme for rapid urban water supply expansion and accelerated rural water development. As a result, in 1993 there were 194 piped water supply systems and 2500 boreholes fitted with handpumps in the country. Currently, GWSC operates and manages 209 pipeborne water supply systems and some 6,600 boreholes fitted with handpumps throughout the country. Potable water production from the piped systems is about 112 million gallons a day (mgd), the largest being in the Accra Tema metropolitan Area (ATMA) which produces 62 mgd serving some 1.6 million people.

1.5 Coverage Status

13. A national survey undertaken in 1992 showed that access to safe water supply in the urban areas (i.e. communities of population greater than 5000) was 76%, and 46% in the rural areas. This represented 57% overall access to potable water in Ghana. it should be noted that this coverage level is lower than originally estimated overall coverage of 65%, made up of 93% in the urban areas and 50% in the rural areas. This is due to deterioration in the

condition of the systems as a result of the economic decline of the late 1970's and rapid population growth.

14. In respect of sanitation, the survey showed that overall access to safe and adequate sanitaiton in Ghana was 29%, made up of 61% in the urban services and 11% in the rural areas. Thus, the development of sanitation services lags behind water supply services. There are only three public and some 15 institutional sewerage systems in the country, the remaining population depends on septic tanks, pit and bucket latrines for disposal of sewerage, the latter being the responsibility of the district assemblies.

15. During the economic decline of 1976-83, GWSC faced increasing difficulties in operating and maintaining its water supply and facililties due to shortage of skilled and trained manpower coupled with insufficient local funds and foreign exchange to purchase repair and replacement parts, hence there was no organised preventive maintenance in place. Furthermore, most of the pumping and treatment plant equipment were old and overdue for replacement.

16. Following the Government's ERP introduced in 1983, a programme of infrastructure rehabilitation was initiated in the water sector to restore lost capacities in the existing systems; expand them to meet the immediate needs of the beneficiary communities; accelerate rural water development, and reform the sector institution by increasing its automomy with the objective of creating an effectively managed and financially viable institution.

17. The strategy was to develop GWSC to a level whereby it could provide access to reliable supply of water of acceptable quality and at affordable prices. These objectives and strategies were expanded and adopted in formulating sector priorities, plans and strategies.

1.6 Sector Strategies

18. GWSC has been adopting the following strategies in provision of potable water.

(i) pipe-borne water supply for communities of population above 2000. In 1992, there were 507 such communities of which 185 of population above 5000 are classified as urban.

(ii) shallow boreholes fitted with handpumps for rural communities of population ranging from 500-2000. In 1992, there were 2,621 such communities; and

(iii) hand-dug well, rain harvesting and spring water catchment for small rural communities of population below 500. There are 44,691 such communities, and of these 35974 have population below 100.

19. In respect of sanitation services, it is the policy of GWSC to incorporate sanitation and health education components in all its rural water supply projects.

2.0 SECTOR PLAN

20. A sector plan was drawn up in 1986. The plan has its priorities as rehabilitation of existing water supply systems; completion of on-going

projects; accelerated rural water development; and institutional support.

2.1 Plan Objectives

21. The objectives of the plan were:

(i) to provide adequate and reliable water supplies in the urban centres through rehabilitation of existing systems and capacity expansion to meet demands in some areas of extreme need;
(ii) improved operation and maintenance;
(iii) completion of all partially implemented projects;
(iv) intensified efforts to accelerate development of water and sanitation services in the rural areas to bridge the gap between the urban and rural coverage; and
(v) strengthening the sector institution (GWSC) to make it more effective in the discharge of its functions as well as make it financially viable.

2.2 Strategies

22. The strategies formulated to achieve these objectives called for mobilisation of donor funding; increased sector budget allocations; effective management of GWSC's operations to ensure generation of funds to finance development projects; manpower rationalisation in GWSC to develop a more effective and better qualified workforce; effective co-ordination of donor and NGO activities in the sector; promotion of research and development of low cost alternative technologies particularly for rural water supply and sanitation delivery; csommunity participation and health education; and institution of appropriate cost recovery policy to ensure sustainable development in the sector.

2.3 The Plan

23. The sector plan called for rehabilitation and capacity expansion of the 209 existing piped water supply systems throughout the country in order to restore them to their original design capacities as well as expand some of them tomeet the immediate water demands of the beneficiary communities at an estimated cost of $92 million. the total production capacity of these systems were expected tobe increased by 68Mm^3 representing 45% increase in production.

24. There were 43 on-going projects at the time of preparation of the sector plan. The total investment required to complete them was estimated at $68 million. The additional production capacity expected on completion of these projects was 33Mm^3 resulting in an increase of 22% in water production capacity.

25. The plan called for provision of 6,000 shallow boreholes fitted with handpumps for 1.020 rural communities of population ranged 500 - 2000 to benefit 1.1 million people at an estimated cost of $81.2 million. it was also proposed to sink 8,063 hand-dug wells in 7,540 rural communities of population below 500, to benefit 2.4 million people at an estimated cost of $18.5 million. The proposed borehole and hand-dug well programme was expected to increase estimated coverage from 50% in 1990 to 75 by the year 2000.

26. The sector plan also called for capital investments in institutional support services without which corporate recovery is unattainable. These

investment = $\frac{42}{68} \frac{10^6 m^3/yr}{10^6 US\$}$ = 1.3 US$/m^3/yr capacity $\frac{77^5}{100}$ = 0.6 US$ (illegible)

$\frac{68}{3.3}$ = 20 US$/m^3/yr

include consulting services and technical assistance; provision of store, workshops, staff housing, vehicles, communication equipment and computers; and recruitment, redeployment and training, all estimated at $77.5 million.

27. the plan was presented to donors and NGOs at a conference in September, 1987 to solicit funding. there was a good response culminating in the formulation of the on-going water sector rehabilitation projects under the Government's Public Investment Programme (PIP).

3.0 PUBLIC INVESTMENT PROGRAMME (1994-96)

28. The PIP was intiated in 1986. In line with the objectives and strategies discussed earlier, the PIP captures water sector programmes aimed at sector rehabilitation, completion of on-going projects, district capitals water supply, accelerated rural water development and institutional support. Some of the main current programmes in the PIP are highlighted below.

3.1 Urban Water Supply

29. There large-scale pipe-borne water supply rehabilitation and expansion projects are currently going on under the PIP. These are estimated to cost $222 million and cover 37 piped systems responsible for over 80% of GWSC's water production.

30. Twenty of the 43 on-going projects have been programmed for completion under the PIP. These will serve some 442 communities of total population 1.7 million throughout the country. The total estimated cost is $37 million being financed mainly by the Ghana Government. Currently, funding has been secured for four such large schemes for completion.

31. Presently 28 district capitals are without water supply in the country. It is estimated that $26 million will be required to provide these towns with potable water. Funding is being solicited from donors to finance the project.

3.2 Accelerated Rural Water Development

32. In pursuance of the sector plan, donor and NGO funding has been solicited to provide boreholes fitted with handpumps, hand-dug wells and ventilated improved pit (VIP) latrines throughout the country. Under the accelerated programme, 3316 boreholes are to be drilled under the various projects out of which 1617 have been completed. Further 4,000 handdug well are to be constructed out of which only 400 have so far been constructed. About $180 million is earmarked for this programme.

33. With assistance from the World Bank and other external support agencies (ESA's), further acceleration in the delivery of potable water in the rural areas is planned with the formulation of a national community water and sanitation programme based on community demand, participation and management of their own facilities. A strategic investment plan was developed for attaining rural water supply coverage of 85% by the year 2005.

3.3 Institutional Support

34. The three major on-going rehabilitation projects in the PIP have components for institutional support spanning the spectrum of technical assistance, vehicle fleet replacement, staff accommodation, workshops and

$$\frac{180 \times 10^6}{7300 \times 400 \times 10} = 6 \text{ US\$/m}^3$$

stores rehabilitation and manpower improvement programme including training. Furthermore, GWSC is participating in the State Owned Enterprises' (SOEs') reform programme under which it formulates a rolling corporate plan and signs performance contract with the Government annually.

4.0 FUTURE NEEDS AND PRIORITIES

4.1 Introduction

35. Some of the future needs and priorities have been identified in the PIP under planning and feasibility studies. A national water and sanitation master plan for the period 1995-2005 is proposed to properly identify and prioritise future needs for water and sanitation services in both the urban and rural areas. Funding is being sought from donor agencies to engage the services of consultants for the purpose.

4.2 Proposed Scope

36. The national water and sanitation master plan is expected to include;

(i) rehabilitation of the remaining piped water systems;
(ii) capacity expansion in the regional capitals to meet their fast growing demands;
(iii) rehabilitation of existing sewerage systems and establishment of new systems in the regional capitals;
(iv) new water supply schemes for the remaining district capitals;
(v) completion of suspended projects; and
(vi) accelerated rural water and sanitation development based on the strategic investment plan.

Preliminary estimates indicate that an investment of over $600 million will be required to implement the plan.

4.3 Targets

37. The target coverage expected is 100% of the urban population and 83% of the rural population having access to potable water supply by the year 2005. Project profiles have been prepared for some of the projects and action is being initiated to solicit donor funding. when formulation of the new 1995-2003 Master Plan is completed, it will be presented to a donors' conference to solicit funding for implementation.

5.0 PROSPECTS

5.1 Introduction

38. For sustainable and accelerated growth in the water sector a broader support and funding base is needed especially for operation and maintenance than is currently in place. Presently, it is the responsibility of Central Government through GWSC AS executing agency, to provide, operate and manage water supply and sewerage services throughout the country. Government mobilises funding and GWSC executes the projects. Funding for urban water and sewerage development and for operation and maintenance is obtained from GWSC's tariff revenue.

39. With rapid population growth and other pressing government commitments to sectors like health and education, the strategy for sustainability and

Themes: – new strategy needed to anticipate an increase population & other many and [illegible]

→ new strategy [illegible] to be more efficient with less resources

increased access to water and sanitation services should now move to participation by the beneficiary communities, District assemblies and the private sector.

40. Responsibilities have been clearly defined at [illegible] regional, national and private levels. Future water supply and sanitation projects will be designed to incorporate these levels of responsibility. The management of existing systems will be gradually transformed to introduce these principles. It is hoped that the communities and district assemblies would accept the challenge.

5.2 Sustainability and Accelerated Growth

4.1 For sustainability and accelerated growth in the water sector the following proposals should be considered.

(i) Community contribution in provision of the services
(ii) Community management of the services provided
(iii) Enhanced decentralisation of the Corporations activities to be better supported and assisted at regional, district and community levels
(iv) Making better use of the Private Sector as provides of procurement of Goods and Services on a broader and more competitive basis that shall include construction of all types of water facilities, manufacturing, distribution and repair of plant and equipment
(v) Enhancing the role played by women in the procurement and management of water facilities and finally
(vi) Government acting as a primary promoter of improved services through mobilising financial resources and support within the national development planning framework.

5.3 Call for Support and Co-operation

42. This Exhibition has brought together many equipment manufacturers, equipment suppliers, consultants/contractors and policy makers in the water sector. The tast ahead is rapidly extending access to potable water countrywide is great. We call for partnership and co-operation through collaboration to make the attainment of our noble objectives possible.

43. The Government of Ghana attaches great importance to the provision of good drinking water and basic sanitation. In pursuance of this objective, the sector institution is being reorganised and strengthened. With government's policy of decentralisation, self-reliance and mobilisation of local resources, there is potential for active community participation in development. This is a key to future development as it will reduce the financial burden on the central government budget. Finally with the continued support of both bilateral and multilateral donors, it is hoped that access to potable water and safe sanitation will become a reality for the majority of our people in the next decade.

RURAL WATER SUPPLY DEVELOPMENT IN GHANA

A PAPER PRESENTED AT THE WATER AFRICA '94 CONFERENCE

BY P. O. SACKEY, Director of Rural Water Suply,
And R.K. VAN ESS, Chief Hydrogeologist, GWSC

The term Rural is used in Ghana to refer to Settlements with population below 5000. Before and soon after Independence, there used to be separate Departments of the Ministry of works and Housing which were responsible for Rural and Urban water supplies. At one time, local council Authorities were made to manage rural Water Supplies in their Locality. However, in 1965, the Ghana Water and Sewerage Corporation was formed by an Act of Parliament to assume responsibility for all Water supply activities in the country, both Urban and Rural. The Corporation took over the assets of the rural Water supply Department which had its headquarters in Kumasi, the second largest city of Ghana and which is centrally placed in the country. The Corporation's Act, mandates it to develop and operate water supplies and public sewerage services to the entire population of Ghana under sound Commercial practices that would enable it break even on its annual Balance sheet. Government equity in the Corporation include capital outlay as well as annual subvention to operational cost until 1987, when the subvention was totally withdrawn. Even before 1987, it was obvious that reliance on government subsidy was risky and undesirable and therefore greater attention had to be focused on the development of Urban Water supplies where the turnover of revenue was better as Compared with the rural Water Supplies which depend entirely on Government subsidy and cross subsidy from the urban Systems. the result has been an apparent low priority for rural water supply development. In 1986, the Corporation established a Rural Water Supply Department to enhance the image of rural water development so as to attract grants from donors to accelerate development.

2. STATUS OF RURAL WATER SUPPLY

An assessment of the rural water supply situation in the middle of the UN Water and Sanitation decade (1986) put the coverage at 39% of rural population as compared with 87% of the Urban section. At the end of 1992, the coverage was assessed at 47%. Components of the Rural Water Supply facilities include 11,000 boreholes fitted with hand pumps, Hard dug wells, Small pipe borne systems made up of mechanised boreholes, package water treatment plants and extensions from neighbouring Urban Water Supplies.

A few protected Spring sources and similar Technologies are also in place.

3. TECHNOLOGY

Technologies for Rural Water delivery in the country have been mainly ground water based. they include hand-dug wells and boreholes.It is currently estimated that there are between 30,000 and 40,000 hand-dug wells and about 12,000 boreholes scattered throughout the Rural areas of the country. Other Technologies like Rain water harvesting, Gravity-pipes systems, and slow sand filtration (SSF) have been developed in a few areas where the ground water potential has been found to be poor.

3.1 GROUNDWATER POTENTIAL

The Groundwater potential of the county can generally be described as good for Rural Water Supply.

The Geology is basically of the basement Complex type consisting of granitic rocks and metasedements.

Along the Coast, sedimentary role of Tertiary to Eocene age occur, but these have little importance for Rural Water Supply because of the saline nature of the water occurring in them.

Groundwater occurrence in the basement rocks is controlled by the degree of rock weathering and the development and distribution of fractures within the rock.

3.2 SITING TECHNIQUES

i) Hand-dug wells

Hand-dug wells are constructed to tap water from the weathered zones of rocks, hence they are successful where this cone is thick. In locating sites for Hand-dug Wells, the general topography of the area is studied and sites are picked along low - lying areas where groundwater convergence occurs and rock weathering is expected to be deep. Where the topography is flat, electrical resistivity methods are employed to a limited extent to locate sites for the wells.

ii) Selection of sites for boreholes is carried out using appropriate techniques where possible. Techniques that are currently being used are: Aerial photo interpretations, Electrical resistivity methods and electromagnetic (EM) methods.

1) Aerial Photo Interpretation

These are used mostly in the Northern Region of the country where fractures are the controlling factors for groundwater occurrence in the voltaian rocks, and the vegetation cover allows for the identification of linecurrents on the photos.

2) Electrical Resistivity method

This method for site selection has been widely used throughout the country. Both the horizontal profiling and vertical sounding methods are used. The Wenner and Schlumberger array have been used for a long time. However, over the past 6 years, the Japanese have introduced the Dipole-Dipole array which has been found to be very quick and reliable in field applications.

3) Electromagnetic (EM) Method

This method has been used on a limited scale on the Japanese assisted project. It is used for a quick scanning of the area followed by vertical Electrical sounding (VES) on areas found promising.

3.3 TECHNICAL DETAILS

1) Hand-dug wells:

These are constructed with final diameters of 1.0 - 1.2m and depths of 9 - 25m. The wells are lined in situ or by caissons in unstable soils and the well apron is about 1.0m above ground. the mechanism for the withdrawal of water is either by rope and bucket system or a low-lift hand pump such as the direct action Nira AF85.

2) Boreholes:

Boreholes constructed for hand pump installation are finished with either 100mm or 125mm PVC pipes. The depths of Boreholes range between 25 - 45m. High lift hand pumps recommended for installion on these Boreholes are :

i. The Ghana Modified India Mark II pump with stainless steel riser pipes and rod.
ii. The Afridev pump.
iii. The vergnet foot pump.

The Technology has generally been applied to communities with population of 500 - 2000

Boreholes for Mechanisation with motorised pumps are completed with 152mm diameter PVC pipes.

They are drilled to much deeper depths which range between 50 and 70m. Electrical submersible pumps powered from the national electric grid or a generating set is the mechanism for water withdrawal. The use of Solar energy as source of power supply is being studied for future application.

3. Other Technologies:

Only a few springs worth harnessing can be located in the country but development of such sources is always given first consideration. Rain harvesting has also been used in a few places.

4. STRATEGIES, POLICIES AND GUIDELINES:

4.1. Planning Criteria:

Provision of Rural Water Supply facilities has been aiming at providing basic service of at least 20 litres /c/ day within the reach of 1 km. To facilitate planning for accelerated development, a rule of thumb has been used as follows:

a) Populations between 2000 and 5000 were provided with pipe borne water supplies made up of mechanised boreholes or package treatment plants.

b) Populations between 500 and 2000 were provided with boreholes fitted hand pumps

c) Populations below 500 were provided with hand dug wells.

With these guidelines, a five year development plan was drawn in 1986 to provide 6000 boreholes fitted with hand pumps and 10,000 hand dug wells. The aim was to achieve 80% coverage of rural water supply in furtherance of the objectives of the UN water and Sanitation Decade. In spite of a Donors' Conference which was held in September, 1987 to mobilise funds for the plan, not many pledges could be obtained and so the target could not be met.

The lessons which came out of discussions of the donors' Conference and from the UN Water and Sanitation Decade as a whole, were however clear, and point to the fact that there is need for a revision of Strategy towards Sustainable Development of Rural water supply.

4.2 Development and Maintenance Policy:

The Ghana Water and Sewerage Corporation has all the time been at the centre of all activities in the provision, operation and maintenance of facilities.

Construction was by direct labour except in major projects, such as large scale drilling of boreholes, when the services of contractors were employed. Even under many such circumstances, the Drilling Unit of GWSC was involved with the aim to boost its capacity to handle most drilling job.

Large scale projects for the provision of boreholes fitted with hand pumps in most cases ended with the setting up of maintenance Units by the GWSC. These units have gone through periods of evolution, ranging from initial employment of heavy equipment including trucks carrying winches and other lifting devices for the servicing and repairs of hand pumps, to the current practice of motor riders using manpower with possible assistance of the villagers to dismantle and repair pumps. These developments have became possible in many cases through replacement of pump components by lighter materials, as in the case of the Ghana Modified India Mark II pump. Beneficiary communities were initially offered free service in the maintenance of the hand pump but were later called upon to pay regular monthly tariff for the services. Of course, there has been difficulty in introducing tariff and there is still considerable default in payment. The technical operations of maintenance are however going ahead satisfactorily with an average of about 90% of pumps in operation at any given time. This achievement is however at the cost of the Urban Services of the corporation.

4.3 NGOs and Guidelines:

Since about 1982, many Non-Governmental Organisations (NGOs) have entered the Rural Water Supply Sector and have been giving appreciable assistance to communities. Government has recognised their contribution and has directed the GWSC to coordinate their activities in order to fit into National Planning. After several meetings with the NGOs, a set of guidelines were agreed upon for compliance by NGOs.

Some of the requirements contained in the guideline include the need to register with the Corporation, to localise their activities instead of spreading themselves thinly over the country, adherence to specifications adopted by GWSC, and the need to ensure that concrete arrangements are made for maintenance of services provided.

It has however been difficult for the Corporation to monitor all the activities of NGOs because of inadequate capacity to do so.

5. POST DECADE ACTIVITIES:

Activities in the Post UN Water and Sanitation Decade, i.e. from 1991 have been centred on the development and implementation of a new policy and Strategy for rural water supply and Sanitation development. Following a study and workshop at Kokrobite in February 1991, a draft policy document was presented to Government in October 1991 out of which Government expressed intent to adopt community ownership and management of services which are to be provided using demand driven approach for selection of beneficiaries and participatory planning with communities. The necessary details of the strategy including Institutional arrangements, Guidelines for the implementation of projects as well as a strategic investment plan with forecasts to the year 2009 and the setting of targets were completed by June 1993. Thereafter the policy was out-doored by the Deputy minister of Works and Housing on 16th march, 1994. The occasion was the opening of a conference (Mole 5) organised by the NGO's

5.1 Objectives of the Programme:

The objectives of the National Community water and Sanitation programme are to:

a) Provide basic water services to Communities that would contribute towards the capital cost and pay the normal operations, maintenance and repair costs of their facilities.

b) Ensure sustainability of these facilities through Community Management, Private Sector provision of goods and Services and public sector promotion and support and

c) Maximize health benefits by integrating Water, Sanitation and Hygiene Education interventions.

6. COLLABORATION IN THE SECTOR:

There are many actors in Rural Water Supply in Ghana and so the need for collaboration and coordination of activities cannot be overemphasized. They include ESAs, different Government Agencies, NGOs and the Private Sector. ESAs who have been active in the sector include:

a) Multilaterals - UNDP, World Bank, UNICEF, WHO

b) Bilaterals - CIDA of Canada, KFW of Germany, JICA of Japan, GTZ of Germany, DANIDA of Denmark, CFD of France

c)	Government Agencies	-	GWSC, DCD, MLG, NSS, MOH, WRRI
d)	NGOs	-	WVI, Water Aid, OXFAM, Global 2000, ADRA, Catholic Church, Presbyterian church, Evangelical Presbyterian church, Anglican church and about 7 indigenous NGOs

At the National level, an interagency coordinating Committee located at the ministry of works and Housing meets regularly to review the Sector. The Committee comprises representatives of the three Ministries of Works and Housing, Local Government, Health; GWSC, all the ESAs with representation in the country, a representative of NGOs and of the private sector.

Many informal collaborative activities also take place in the form cocktails at the invitations of top Government officials or ESAs especially on the occasion of visits of missions or individuals from the ESAs or NGOs.

At the Regional level, UNICEF has set aside funds to promote meetings of regional co-ordinating committees of the sector. Some regions lack leadership to initiate such meetings but some have been doing very well especially the Northern region where NORRI and GWSC have co-partnered in organising such meetings.

The Annual Conference organised by the NGOs led by Water Aid under the title of Mole series of conferences, has been serving a useful purpose in promoting collaboration among sector participants.

Not much has taken place in the form of collaboration at the District level but it is expected that the new structures been formed under the new Strategy (District Water and Sanitation terms) will be the foci of collaborative activities at the District levels.

7. INFORMATION, EDUCATION AND COMMUNICATION (IEC):

As described earlier, there was little IEC component in earlier projects in Rural Water Development in the Country.

That is because Government was providing such facilities as social services to communities. However, as the need for community participation became necessary for the reason of sustainability, IEC is gradually being recognized as an essential component of all projects.

The CIDA sponsored project in the Upper East and Upper West regions has been carrying out a follow up IEC programme titled Water Utilisation Programme (WUP) since 1984. It includes intensive radio programmes.

In the new strategy of community Water and Sanitation, IEC is a major component and will be carried out by Partner Organisations already specialized or to be developed in the field. Expertise in the development of information materials is fast gaining popularity in the country.

In the French CFD financed project in the Central Region, IEC has been given the due importance it requires. In a UNDP supported pilot project just completed in the Volta Region and one, on going in the Eastern Region, IEC has been quite well practiced with useful lessons coming out of the projects.

8. THE STRATEGIC INVESTMENT PLAN (SIP) 1994 - 2009:

A Strategic Investment Plan (SIP), has been prepared for the community water and Sanitation programme in the Country. Table 1 gives the highlights of the plan which envisages an investment of the order of US$200 Million within the next 15 years. It calls for the provision of about 27,000 dug wells, 7,500 boreholes fitted with hand pumps, 600 Rural piped systems and rehabilitation of 15,000 existing hand pumps. It is expected that the provision of these facilities will raise the coverage of Rural Water Supply to at least 80% by the year 2009. It would amount to providing a basic level of Water supply service to about 10 million people at a cost of about US $20 per capita. An annual investment of the order of US $13 million is expected within the period. The continued support of our kind donors is solicited to achieve this goal.

9. CONCLUSION:

Government has targeted Rural infrastructure development, especially Water supply as its top priority. This is reflected in the manifesto of the ruling party and in various utterances by top government officials including the Head of State.

We wish to take advantage of this expression of goodwill to enhance our activity in the sector. Our new policy and strategy coupled with the enthusiasm showed by our donors will surely urge us on to make a leap in sustainable development of Community Water Supply and Sanitation.

We are also committed to the global effort of eradication of the Guinea worm disease by December 1995 and we see the immediate targeting of the provision of potable water supply to endemic areas as the main factor in the effort. At the same time, we wish to ensure sustainablity of our projects through the adoption of a demand driven approach to development. The application of IEC is the answer and we wish to emphasize it.

I wish to conclude by acknowledging the continued support of our several donors and NGOs and to make a call for more support.

Collaboration between public and private sector institutions on capacity building for rural water sector delivery within a community management framework.

Judith Thompson, Executive Secretary, ProNet, Ghana.

1. Introduction

Ghanas' rural water supply and sanitation strategy has recently been launched after about five years of very careful thought and a lot of consultation with the various sectors of the society that make the sector work. The strategy embraces the current thinking in the sector which shifts the primary responsibility for community water supply away from a centralised Ghana Water and Sewerage Corporation (GWSC) to the communities themselves. Under these circumstances there is a partnership between the community and government agencies in which neither is dominant and each plays a role. The strategy by the same token involves the private sector in the provision of goods and services for the sector.

This shift in emphasis calls for the involvement of communities in planning, controlling and having the authority to manage the facilities. Thus central to Ghanas Water and Sanitation Sector Strategy is the issue of community management. The strategy integrates the provision of water, sanitation and hygiene education. Hygiene education provided at community level links good water supply facilities with better health for community members which has the knock on effect of creating the demand for and better maintenance of facilities the communities are investing in. The rationale for this shift is to ensure sustainability of the facilities.

As the strategy has led to a shift in the roles of GWSC, communities and the private sector there is an immediate need for capacity building at all levels to facilitate a closer working relationship among the sector professionals and institutions. I shall briefly outline the institutional arrangements on which Ghanas community water and sanitation strategy depend in order that roles and responsibilities are clear and the areas for collaboration are apparent.

2. Institutional arrangements (The Community Water and Sanitation Division)

1. Community level

Communities will set up Watsan committees which have a gender balance to be the focal point for all water and sanitation activities in the communities. They shall do the following:

i. Operate and maintain facilities.
ii. Generate revenue to meet operation and maintenance costs.

2. District level

District assemblies are to establish District Water and Sanitation Teams (DWSTs). These are 3 person teams with skills in the area of hygiene education, community development and rural water technology who will do the following:

i. Disseminate information on the programme.
ii. Receive and vet application from communities.
iii. Monitor and evaluate the activities of all consultants and contractors operating in the district.
iv. Receive, cross check and forward to the Regional office facilities and management plans of the communities.
v. Submit reports to the regional office on all activities in the district.

3. Regional level

Regional water and sanitation teams (RWSTs) have been established in two regions. They are five person teams made up of the following:

i. A Coordinator.
ii. A Rural Water Engineer
iii. A Sanitation Engineer.
iv. A Community Development Officer.
v. A Health and Hygiene Education Officer.

Their responsibilities will include:

i. Planning, monitoring and evaluation of the regional programme.
ii. Dissemination of information throughout the region.
iii. Provision of technical support, training and operational support to district staff.
iv. General supervision of construction activities.
v. Training of private hand pump mechanics and latrine construction artisans.
vi. Reporting to the National Office on a regular basis.

4. National level

Based in Accra and headed by a Deputy Managing Director to be supported by the following:

i. A Planning Officer.
ii. A Technical Coordinator.
iii. Monitoring, Evaluation and Planning Officer.
iv. Accountant/ Procurement Officer.
v. Administrative Officer.

Their roles are:

i. To establish policies.
ii. To Set standards and priorities.
iii. Coordination.
iv. Regulate the private sector.
v. Establish national database.
vi. Planning.

3. Sector Institutions

There are two categories of institutions in the water and sanitation sector. These are the Private sector institutions and the Public sector institutions.

The Private Sector will provide all goods and services for Community Water and Sanitation. This should lead to more widespread and sustainable coverage and increased employment in rural areas.

Specifically they will

* Help communities to prepare Facilities and Management plans, conduct surveys and design piped systems, construct latrines, dug wells, bore holes and piped systems, help communities to operate and maintain their water supply facilities and distribute equipment and spare parts.
* Private firms and artisans will be contracted to provide services.
* They will provide planning assistance to communities.

It is important to note that the private sector is made up of two categories of actors -

i. Those involved in the sector with a profit motive who will none the less provide good quality facilities and accompanying services.
ii. Those involved in social development activities which will focus on developing skills of community organisations like Watsan Committees and training of private sector contractors who will be involved in direct provision of facilities. These organisations are mostly non profit making in that money made is usually for operation of the organisation.

The Public Sector is now playing a facilitating role as is evident from the institutional framework that GWSC has adopted. On behalf of the government GWSC will manage the National Community Water and Sanitation Division especially the funding for actual construction and they will provide technical assistance to districts which will increase their capacity to deliver. They shall also facilitate the Private Sector in its provision of goods and services to the sector. A lot of the support that it will be providing will be achieved through training.

4. Capacity building

This is a term which is used very frequently but for those of us running private sector institutions it simply means increasing effeciency. In this sector that will lead to:

i. The provision of more water points and latrine facilities.
ii. High and observed standards.
iii. Access to information.
iv. Institutions which have clearly defined roles.
v. Human resources with relevant training and motivation.

The institutional framework outlined in Section 2 indicate that the GWSC, the main public sector organisation has been reformed in such a way that Community Water Supply has been made a major task of the Corporation. Its roles are now clearly defined, staff have been recruited with the requisite skills which will enable them to perform creditably. It may not be evident now but in due course the Community Water Supply Division will have the necessary logistics which will enable them to perform the facilitating role that has been given to them.

In the strategy provision has been made for the staff in the framework to acquire formal training and also to learn systematically from the experiences that they are acquiring on the field. There is an argument which holds true that training is not enough and staff must be motivated materially and in terms of career prospects for them to perform. It seems to me from the outside that the division as it has been molded deals with the issue of motivation related to a decent salary and career prospects, however the personnel from within may wish at the end of my presentation to make me change my

The private sector has also now been empowered to provide goods and services under the new strategy. The institutions have had a reputation for providing high quality facilities and providing communities with information which enables them to make decisions about service levels and most important provides simple management and hygiene education training. This sector is crucial as in the end what the strategy aims at achieving are increased well managed water and sanitation facilities.

Even though I have made the assertion that training is not all that there is to capacity building, I think that it is worthy of note that there shall be two main training institutions which will act as a catalyst for capacity building. These are the Training Network Centre based in the University of Science and Technology in Kumasi and the Small Business Development Units (SBDU) run by private sector institutions which can also be called NGOs.

The former will provide training for public sector practitioners in the water sector and will develop training materials and methods to ensure that they fulfil the tasks assigned them in the strategy. They will coordinate what could be the most significant feature of capacity building in the sector which was recently termed " The Training Forum " This Forum brings together all those actively involved in training in this sector - the SBDUs, the CWSD and the TNC itself. It is hoped that this will accelrate the rate institutional strengthening for the sector.

The latter (SBDU) will provide training for Hand dug well contractors and Partner Organisations. The training for HDW contractors is both technical and entrepreneurial. Training for POs is in hygiene education, community mobilisation and management. As stated in the previous paragraph the SBDU will be a part of the Training Forum.

5.Conclusion

The strategy as I understand it literally creates space for the various sectors. The Private Sector can now be contracted to provide a range of services to the public sector and so in a way collaboration may seem forced, however I think that it is just guaranteed. Collaboration brings out the in most cases a perfect whole, as I have stated earlier prevents dominance and creates an acute understanding of complementary roles.

In the strategy every sector has been assigned responsibilities where they have a comparative advantage - hence the NGOs who are strong at creating capacity at community level will be contracted by the GWSC to provide services at community level and private contractors who have a track record of providing superior services are contracted to provide them.

To ensure that the strategy is a success training has been carefully built in to all the sectors to guarantee their ability to deliver and also to bring everything together.

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A transition to community managed urban water supplies in Northern Ghana

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Urban Water Supply Problems

There are more than 40 urban water supplies in Northern Ghana, centrally managed by the Ghana Water and Sewerage Corporation (UWSC) through three regional offices. Many of the supplies are not operating; either broken down or shut down due to non-payments of water bills. Of those supplies that are operating, most are unreliable and inconvenient for consumers, and as a result are not used as primary water sources by urban residents.

GWSC's capacity to effectively operate and maintain these facilities is constrained by many factors. Recurrent operating budgets received by GWSC are not sufficient to maintain and operate the water supplies under their control. Revenues raised by billing consumers do not cover operating costs, let alone provide for supply rehabilitation and upgrading. Spares parts are difficult to obtain for the primarily imported water supply equipment. GWSC staff are in general poorly trained and lack adequate motivation and supervision to perform effectively. Communications and transportation between individual water supply offices and the regional offices is difficult.

Over the years, a considerable degree of animosity has developed between GWSC and residents of urban communities. On the one hand, GWSC feel frustrated in being unable to properly operate and maintain the water supply facilities for which they are by law responsible. Lack of sensitivity to the needs and problems of consumers compounds this frustration. On the other hand, urban residents are annoyed with the poor service they receive from GWSC, are understandable reluctant to pay their water bills, and feel powerless in improving the situation. As a result, many urban residents rely upon non-GWSC water supplies to meet their needs. Many of these supplies are polluted and negatively impact their health.

Laying the groundwork for community management

Recognising the need for GWSC to perform more efficiently and effectively, and also the need for urban residents to take a significant role in improving and sustaining their water supplies, the GWSC Assistance Project was formulated for the 1990 to 1998 period. The Canadian International Development Agency (CIDA), with a long history of sector support in the rural areas of Northern Ghana, is funding this initiative to prepare and implement a transition to community management of urban water supplies.

Initially, the Government of Ghana demonstrated commitment to the process in the May 1991 KoKrobite Conference[1]. The action plan developed at this conference identified community management of services, meaning ownership and control, as being the central element. Other key elements of the action plan included: decentralised, district-level support for community management, with government promoting services provision; encouraging an active role in the process by the formal and non-formal private sector; and adhering to a demand-driven approach to enhance sustainability.

Subsequently, the Government of Ghana reiterated and refined its commitment to community management in the April 1993 Accra Statement on Sustainable Operation and Maintenance of Rural and Urban Water Supplies in Ghana[2]. Among other principles identified, effective control of water supplies vested in the local communities was endorsed, as well as the need to consider water an economic commodity in volumes above a lifeline supply for the poorest communities.

Creating an enabling environment

One major objective of the GWSC Assistance Project is to help the Government of Ghana, through GWSC, to create an enabling environment for a transition to community management of urban water supplies.

A community liaison section was created and institutionalised within GWSC. During a three-year period, contracted community workers and a coordinator worked with counterparts drawn from GWSC's regional and district offices. Gradually, as the counterparts developed skills and abilities in community development, responsibility for day-to-day activities and work planning was turned over to them. The community liaison section is now effectively operating under GWSC management, and external advisory input is minimal.

Engineers and other technical GWSC staff are being sensitised towards community management through a variety of in-service workshops and by individual training courses. Workshops and training courses address the issues of community participation, integrated sector development, low-cost appropriate technology, and gender issues, within the context of GWSC assuming a supporting role to promote community-managed operation and maintenance of urban water supplies.

Financial and commercial GWSC staff, long isolated from decision-making and management in the corporation, are the focus of a commercial optimisation strategy. Developing the capacity to offer supply and service contracting to managing communities is one aspect of this strategy, to provide spare parts, consumables, repairs and technical advice. Increasing the role of the private sector within GWSC's operations is another aspect. Special emphasis is being placed upon improving GWSC's revenue generation, accounting and other financial management systems.

To broaden the impact of the transition to community management, a series of national-level workshops and seminars have been planned. Improved communications between the regions and headquarters within GWSC are resulting. Also increased collaboration between GWSC and other sector groups, such as non-government organisations, is evident. In addition, community representatives have had the opportunity to interact with these groups and GWSC on a broader scale.

Empowering and equipping urban communities

Another major objective of the GWSC Assistance Project is to empower a group of urban communities in Northern Ghana, equipping them for management of their water supplies.

Water and Sanitation Development Boards (WSDBs) have been established in 14 communities, which serve as the primary vehicle for community management. Communities range in size from 5,000 to 50,000 inhabitants.

Each WSDB is constituted within the Government of Ghana' s legislation establishing and empowering District Assemblies. Each WSDB comprises a membership elected and nominated from the various interest groups and representative institutions within the urban community. Membership is for period of two to three years, and the WSDB selects its own executive committee. Constitutions are drawn up between each WSDB and their District Assembly, and enabling bylaws for water supply management are drawn up with the District Administration. Women are well represented, comprising approximately one-half of the WSDB membership and present on all executive committees.

During the past two years, WSDBs have been engaged in a participatory water supply rehabilitation planning process. In each community, there is an existing pipe-borne water supply, but most residents have relied upon hand-dug wells, handpump boreholes and untreated surface water. The participatory planning process has indicated that residents prefer a water supply based on a mix of technologies. While rehabilitation and minor extensions to the pipe-borne supplies are planned, rehabilitation of hand-dug wells, and rehabilitation of existing and construction of new handpump boreholes are also planned. Solar-powered pumps will be used in several urban centres to reduce operating costs, and in one urban centre, a slow sand filtration unit is planned.

Interim improvement to the urban water supplies, primarily distribution system repairs and upgrading, have been undertaken. This work has been managed by the WSDB. Implementation of rehabilitation works in each urban centre is conditional upon the WSDB establishing an operation and maintenance fund. Several communities have already successfully accomplished this, collecting six month's projected operation and maintenance costs, and major rehabilitation works are commencing in these urban centres.

A major activity involving WSDBs is training members so that they have the skills required to manage the water supply facilities. Workshops are conducted on topics such as financial management, administration, technical management, communications, conflict resolution and marketing. WSDB members have recognised the need to improve sanitation conditions and hygiene practices within their communities, and have been trained to conduct public education programmes for urban residents. Technical training for WSDB employees, such as supply operators and plumbers is being planned. The emphasis will be upon on-the-job training during rehabilitation, followed by training support during the actual operation of the supply facilities.

The awareness of water and sanitation issues, as well as the potential for sector development planning and coordination, has been raised with District Assemblies and Regional Administrations. Sessions are being conducted, involving WSDB members and others as resource persons, to help forge collaborative linkages at the local level for water supply management. In particular, development financing and co-funding of water supply rehabilitation through the District Assemblies is being explored, to provide a sustainable framework for future community management.

Progress towards community management

To date, all 14 urban centres and their WSDBs have developed significant capacity towards management, ownership and control of their water supplies. GWSC staff and management have begun the shift from being providers of water supplies to becoming promoters of community-managed services and facilities. As was to be expected, some communities have moved more rapidly towards community management, while others have progressed more slowly. Within GWSC, some staff and sections are more proactive than others towards the changing environment within which they are working.

Four urban centres at present have embarked upon full management of their water supplies through their WSDBs. Community enthusiasm and commitment is high, reflected by good levels of fund-raising and participation in planning and rehabilitation activities. Three other urban centres, at present still conducting their water supply rehabilitation planning, are also expected to embark upon full community management though their WSDBs in the coming year.

Five other urban centres, who have completed rehabilitation planning, have demonstrated less enthusiasm and commitment to full community management to date. It is probable that an interim management arrangement will evolve between the WSDBs and GWSC in these communities. WSDBs may manage revenue collection for example, or may manage the hand-dug well and handpump borehole component of the water supply, with GWSC managing production and distribution of water through the upgraded pipe-borne supply component. Eventually, as experience and confidence is gained, some of these WSDBs may move towards full community management of their supplies.

The two largest urban centres, with populations of 30,000 and 50,000, have completed rehabilitation planning and are moving towards varying degrees of community management of their water supplies. The smaller of the two communities is prepared to purchase water in bulk from the GWSC-managed borehole production field. The WSDB will manage these bulk water purchases, and manage piped water distribution throughout the community. Also, the WSDB will manage the hand-dug wells and handpump boreholes within the urban area. The larger of the two communities is prepared to let GWSC manage the production and distribution of treated surface water, at a tariff to recover the full cost of this service. The WSDB will manage the hand-dug wells and handpump boreholes within the urban area.

There is no proven prescription to enable community management of urban water supplies. Flexibility and adaptiveness are required to try various alternatives and to accommodate conditions that change with time. Also, different urban communities will devise different means to achieve the same goal. This diversity must be accommodated and encouraged within any effort to enable community management. External inputs such as technical assistance, advisory services, training and financial support can act as catalysts in the process of community management, but the process must be internally controlled and demand driven from the community level outwards to be sustainable and effective.

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Traditional leadership and community management — implications for a rural water project

Nancy Cosway, Consultant in Community Development, Training and Health Education, Canada, and **Steve A. Anankum**, Community Development Specialist, Ghana.

Introduction

This paper will discuss the findings and recommendations for a proposed community management strategy of a water resource in the Upper East and West Regions of Ghana. It is based on research undertaken by the authors while working in the Community Animation Unit of the Water Utilisation Project in the Upper East and Upper West Regions of Ghana. The Water Utilisation Project (WUP), funded by the Canadian International Development Agency, was established to maximise the health benefits of the potable water provided by 2600 boreholes fitted with handpumps. The WUP was implemented by Wardrop Engineering Inc. of Canada in partnership with Ghana Water and Sewerage Corporation (GWSC) until August 1992. Nancy Cosway was a Canadian Advisor employed by Wardrop and Steve Anankum was on secondment to the project from the Department of Community Development. The project has three components: health education; pump-site development; and community development. In 1991 a Community Animation unit was established to develop a proposed strategy for involving the village people in the management of their handpump. This proposed strategy was developed based on the data collected in village surveys, case studies and examination of a similar UNDP funded project.

Background

There have been numerous water projects initiated in West Africa during the Water Decade by government and non-government agencies with varying degrees of participation, commitment and acceptance of responsibility by the local beneficiaries. ' Some projects have been conceived, planned and implemented without input from the local recipients. There may be many reasons for this approach: perhaps it was more efficient to plan outside the community; it was perceived by the donors that local people would not understand; local people did not have the knowledge or skill to be involved in the process; agreement would be difficult to reach in the local community; donors had much experience to draw from and people at the local level had little. There was little recognition that village people had experience, knowledge, skill and interest and should be involved in their own development and the ongoing sustainability of projects.

Community projects, like managing the local market, planning and coordinating festival activities, cooperative farming, construction of clinics, collection of "lampoo" (taxes) and many other activities have been managed successfully by local community members for generations.

Successful management confirms that people have the knowledge and capability for the development and sustainability of projects to benefit their community.

"Communities are structured to provide leadership, conduct social and religious activities, and attend to legal, property and economic matters affecting their members. The control of traditional water supply sources is part of the structure"[1]

The WUP Community Animation unit undertook research during 1991-92 to prove or disprove the following hypothesis:

- information from community members is needed at all stages of a project: prior to initiating, and during design, formulation, implementation and evaluation. This information is critical for success and sustainabliity of the project.

The data was collected in a survey of 100 villages in the Upper East and Upper West Regions and 6 case studies, three in each Region, were completed. The research team examined traditional leadership structures, decision-making processes, and the rôle of women, youth and the elderly. These findings were used to evolve a strategy for community management of the water resource, one or more handpumps located in the community.

Methodology

The Community Animation Unit was formed in the WUP to collect data on the incidence of self help community development projects, determine the reasons for success or failure and develop a strategy in which people in the village could successfully manage their water resource.

The survey and case studies were conducted by Ghanaians attached to the project who had knowledge and skill in community development, handpump maintenance and health education. They also could speak the local languages and were from the Upper East and Upper West Regions. Survey instrument, training programme and field supervision were designed and implemented by the co-supervisors of the unit, Steve Anankum and Nancy Cosway.

The survey was conducted in 100 randomly selected villages in the Upper East (55) and Upper West (45) Regions. The purpose of the survey was to examine the methods of management and maintenance of self-help projects and to identify any common components in the villages that contributed to their success. The researchers wanted to confirm, as they believed, that within the village there were traditional leadership and decision making processes that contributed to the success of community development activities. The researchers trained interviewers who spoke the local dialect and knew local protocol to be followed when collecting information from villagers. A number of individuals were interviewed in each community and one group meeting was held in each community. There was cooperation in all 100 villages. People seemed pleased to talk about their successes and elaborate on their community management abilities.

Identification of a project that was unsuccessful was

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more difficult but was accomplished in a number of villages. Nine out of the 100 villages had never had a successful self help development project. This low failure rate was very encouraging and indicated there must exist some leadership and structures which contributed to the success of projects.

The case study was conducted in 6 villages with the goal to document how formal and informal organisational structures operated within the community with respect to community development and self help projects. Important aspects of community life examined were: decision making processes; role of women, youth and the elderly; interaction of traditional, and modern political structures; and identification of the elements necessary for success. Researchers worked with local residents to collect the data and lived with the people in the village for a short period of time to observe informal interactions within the village.

A third informal source of information on community structures and management was an adjacent project. It was a UNDP-funded project in SO communities with handpumps in Bolgatanga (Upper East Region). In this project, the earlier handpumps had been replaced with village level operation and maintenance (VLOM) models and Community Water and Sanitation Management Committees established in each community. These committees had been closely monitored and supported by the UNDP staff.

Findings

It is revealing to note that in the survey of 100 villages, which all had at least one handpump, no community identified the handpump as a self help development project. Possible reasons for this could have been: Ghana Water and Sewerage Corporation (GWSC) and the Canadian International Development Agency initiated the installation of handpumps in villages rather than acting upon requests from the community; communities paid a tariff to GWSC and perceived GWSC as the owner of the pump; pumps were repaired by GWSC mechanics, rather than locally trained people; involvement of villagers during construction was minimal; researchers were linked to GWSC and village people may have assumed they wanted to know about projects other than the pump; and division within the community to draw water from a specific pump did not necessarily follow traditional lines of division in the village.

It was found that the chiefs and elders, who formed the traditional leadership structure usually, introduced a self help project to the community. The idea may have been presented to the chief and elders by an individual or specific interest group but the traditional leadership presented the idea to the community as a whole at a general meeting. This community meeting would be held after the chief and elders had sufficient time to discuss the idea and agree that it would be beneficial to the community.

Traditionally the meeting would be attended by men and women but the men would do most of the discussing and the women answer questions when specifically asked. The decision would be made at the meeting to accept or reject the project. Agreement was by consensus not by formal voting with majority rule. The discussion may take more than one meeting and all opinions needed to be heard. At times the discussion would seem quite heated. Benefits to the community had to be recognised by everyone involved and consensus reached.

Elders were respected and recognised as having an understanding of the history and value system of their community. Their opinion was often sought by the chief when making a decision. Others that may have been involved with the chief and elders were the political representatives of institutions like the District Assembly and Committees for the Defence of the Revolution (CDRs).

Most frequently, the people of the village accepted the decision of the chief and elders as they respected and trusted their leaders to have the knowledge and authority to make decisions that would benefit the community. There were a few cases where the traditional leadership was not respected and held little power in the village. In these situations an alternative leadership, youth leader, Tindana, or other respected villager spoke out and gained support from the community members.

It appeared that in all the survey, case study and UNDP villages, the traditional leadership of chief and elders, with occasional input from the political structures brought forth ideas to the community and made decisions regarding implementation of self help projects.

Many communities had a Village Development Committee (VDC) who were responsible for any village development activity initiated by the community. The Village Development Committee was seen as a modern structure outside the traditional leadership, but did recognise the importance of the traditional leadership. Most people in the community saw the VDC as having responsibility for management of village development projects, although in a number of situations it was stated that everyone was responsible, not only the VDC. This situation tended to be in villages which were small and very well organised.

In the UNDP villages, Community Water and Sanitation Management Committees were established, as the project required this. These committees did not necessarily follow traditional leadership or structure and were supported externally by a village education worker. Both the VEWs and the Committees relied on external project staff for support, encouragement and follow-up. This was to ensure the financial management and maintenance was achieved.

Decisions about the project, once accepted by the community were left to the VDC. Many of the committees had handled a number of projects within the community. There did not seem to be a need or desire to set up a new committee for each and every project. Many of the committees were well organised, functioned successfully and had been given responsibility by the community to manage the project. In all successful projects the community members had identified a structure that existed within their community and was accepted as having direct responsibility to manage and direct the project. To the outsider this structure or organisation may not be obvious as an outsider may not understand the organisation and lines of authority in the local community setting.

There were several management skills necessary to successfully manage the handpumps as illustrated in the 50 UNDP handpump communities. Financial management was the most critical.Most communities were familiar with the process of collecting money for a communal activity or a project, but the saving of money for future activities or expenses was not a common practice.Thus, banking was new to many of the communities and the skills and knowledge of banking procedures had to be learned.

Women, most frequently, were seen as the most trustworthy and honest to collect and ensure that money was put to the purpose for which it was intended. Men were seen as untrustworthy as in the past they had collected money for communal activities and had spent it on themselves or left the village for some time with the money. Illiterate women had developed methods of keeping track

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of the money collected. A literate person, usually a man, would then do the ledger and deposit the funds in a bank account. Whenever money was needed to replace a broken part it was collected rather than the savings being used. One person likened this to buying meat in the market even though he had several goats and sheep. The animals were considered to be insurance and when he did not have money this reserve could be used.

Conclusions

Self management of development projects is a concept and practice that exists in villages in the Upper East and West Regions of Ghana. People often work together to benefit the entire village.Many self help projects are initiated, managed, directed and maintained by the community members. This practice of self management may not be obvious to or understood, by the outsider, nor is it well documented: however, when time is spent with villagers, as was done in the case study, one can see traditional structures that do work effectively to manage local affairs.

It is important that enough time be allowed for discussion of a project within the community to ensure that traditional processes for decision making have been followed and there is community acceptance and agreement. The community, from the chiefs and elders to the individual members,need time to internalise and fully accept the proposal. This will better ensure commitment and success if there is a feeling of "ownership" of the project. Decisions by consensus take longer but assure the commitment of all involved.

Project staff need to recognise that there is a structure in communities for decision making and these are suitable and sustainable structures. They may be different from what an outsider would suggest but they meet the needs of the community and they work within the resources and constraints of that particular community. Enhancing an already functioning and successful decision making and management structure or hierarchy is more beneficial to a project than creating new and unfamiliar structures. There needs to be attention given to the formal and informal leadership based on interest groups as all have recognised leadership and decision-making processes.2 This was supported by the findings in the WUP case study and survey data. The chief and elders as well as VDC have a major role to play in the management of community water resources.

External project staff should be aware of the traditional divisions within the community. Some villages may be divided by clan, language group, family, or religion. Each division has its own leadership which then has a relationship and accountability with the overall chief and elders. These divisions are the basis for much activity in the village and project staff need to be aware and usethem when appropriate. These divisions were not necessarily considered when installing the boreholes and handpumps as there were other determining factors as to where the borehole should go. It was possible that one section in the village had two handpumps and another section had none. This may have caused some problems with payment of the tariff and accessibility of water for all the section members without the handpump. In order to be the least disruptive and have the greatest possibility for success external project staff need to be aware of and enhance theestablished, accepted village structure, divisions and leadership.

Community management of water systems includes financial and technical management. The project should build on the skills and abilities that the villagers have developed in managing other projects and assist them to transfer the skills to handpump management. This will be accomplished through training and development of the financial and technical management skills.

In summary, community management activities include:

- Planning and negotiation of project — community accepts or rejects the project through traditional leadership and decision making structureswith technical guidance from donor or implementing agency.Community and donor agree on areas of responsibility.

- Implementation and decision-making — existing community structures are recognised and enhanced to define roles and responsibilities for ongoingproject implementation, maintenance and evaluation. Women are encouraged to be part of the decision making process as they are the managers of water in the family and community.

- Training for financial management — control and management of all money is within the community and accountability to the overall management committee. Financial and management training provided as needed from the donor or implementing agency. (not critical)

- Maintenance and repairs — with the installation of Village Level Operation and Maintenance pumps, village mechanics are accountable to the community and all repairs are made by the trained mechanics in the community. Local manufacture and distribution of spare parts through local agents at controlled prices is encouraged and beneficial.

- Ongoing support — make use of existing structures/institutions to support community action and activities, for example District Assemblies, Village Development Committees and other organisations.

John Pickford, in his publication The Worth of Water[3], states there are five conditions for success in self-management.

1. The community must be involved at all stages of the project.
2. Roles and responsibilities of community and government agencies must be clearly defined and obligations fulfilled.
3. Government and agencies act as supporter of the community, not as owner or manager of the water system.
4. Contact between community and agency is through staff whose primary skills are organising and motivating the community.
5. Government agencies fulfill their limited but vital tasks of motivation, training and technical assistance.

The findings of our research confirm and support Pickford's observations.

An agency can only move as quickly to the goal of community management as the community is willing to accept. Communities may agree and comply with an outsider, but if the community is not allowed time and oppor-

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tunity to "own" the project the project will not be sustainable. With ownership and responsibility comes commitment.

In the publication by G.F. White, *Drawers of Water* (1972), he suggested that local people need to be included in a significant way in the planning and implementation of rural water supply projects. Twenty-two years later it is still a challenge to the planners, development agencies and implementing agencies to fulfil this vision.

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Constraints to rural water supply in the Ketu District of Ghana

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Abstract

The Ketu district is located along the south-eastern coast of Ghana and has a rural population of about 130,000 people. Many rural water projects have been undertaken in the district with the aim of providing potable water to the rural communities. The declaration of the International Drinking Water Supply and Sanitation Decade in 1980 also brought about increased efforts in this direction.

Despite these efforts on the part of the Government and Non-Governmental Agencies the rural communities are still short of a safe and reliable water supply system. Annual acute water shortages are experienced during the peak of the dry seasons. This calls for urgency in addressing the situation in order to achieve higher coverage of water supply in these communities.

Lack of active community participation in project planning and implementation is one of the major constraint critically examined. Other specific constraints include lack of public education, operation and maintenance of handpumps, hydrogeological conditions and high salinity.

Also included in this paper are recommended strategies adopted for the successful implementation of future water projects at a recent workshop on rural water supply. These new strategies focus on issues such as demand-driven programmes with self-selection and clear commitment by communities to enhance sustainability and the key role for the District Assemblies in the promotion of rural water supply.

1. Introduction

In Ghana, the desire to provide the rural people with safe and adequate drinking water and improved sanitation has been placed on high priority by the Government. Thus, the launching of the International Drinking Water Supply and Sanitation Decade by the U.N. in November 1980 brought about more increased efforts to provide clean water and sanitation to all by 1990.

One of the beneficiaries of these rural water supply programmes in the country is Ketu district. Located in the south-eastern corner of the Volta Region (refer fig. 1) it has an area of 88 km^2 and a mean annual rainfall of 85-110 cm. There are 874 rural villages with a population of about 130,000 people (1991 figures). The urban population is about 63,000.

The main geological units in the district are Tertiary sediments (60%), crystalline basement granitic gneiss (20%) and Eocene-Cretaceous formations (20%). Surficial deposits consist essentially of recent marine clays and sands.

2. Existing water supplies

Both the Government and Non-Governmental Organisations (NGOs) have been involved in the provision of water to the rural communities in this district. Among these agencies are:

World Vision International (Ghana Ltd.);
Ghana Water and Sewerage Corporation;
VORADEP;
Catholic Church;
E. P. Church; and
Unicef.

Water supply projects carried out in this district include mainly the drilling of boreholes and the sinking of hand-dug wells. A number of water conservation techniques, such as rainwater harvesting and dams, are also in use, although they are not widespread.

There is a total of 653 hand-dug wells in the district. Only 80 villages have access to hand-dug well supplies and they account for 14% of the total number of hand-dug wells. Furthermore, a total of 54 boreholes have been drilled in this district. Currently, only 20% of the borehole supplies are operational; four mechanised ones have been rehabilitated recently and 10 handpump fitted boreholes are still functional.

Untreated surface water sources such as streams and dug-outs which many rural villages depend on are also seasonal and unreliable.

Table 1 presents estimates for water supply and demand in this district. The values show that only about 30% of the current demand is met by the existing supplies. In the rural areas, it is only 17% of the demand which is met.

Table 1. Daily water supply and demand information.

	Demand (m3/day)	Supply (m^3/day)			
		Dug Wells	Hand Pumps	Mechanised Boreholes	Sub-Total
Rural	2900	355	140	-	495
Urban	4165	-	60	1600	1660
Total	7065	-	-	-	2155

3. Evaluation of Progress

Despite the progress made in the execution of a number of water projects in the district major challenges still remain. Most of the present existing water supply systems are not reliable and in some cases have ceased to function. This has resulted in annual acute water shortages being experienced frequently during the peak of the dry seasons in some of the rural communities where these projects were executed. Villagers have to trek for several

kilometres looking for water and guinea worm disease (Dracunculiasis) are still prevalent in some of the communities such as Dzodze Penyi and Weta despite the provision of boreholes.

A typical scenario of the rural water supply situation is provided by the data compiled by the Ghana Water and Sewerage Corporation on the conditions of some of the boreholes they drilled in the district with funds from the central Government. This is graphically depicted in Fig. 2. Out of 25 boreholes inspected only 40% are still in use.

This premature failure and in some cases the poor performance of existing water supply systems is a major setback to progress and represents wasted investment. Considering the present economic climate in the country does not provide enough support to social sector investments, it is of utmost importance that reasons for failure of some of the water projects in the district are identified and appropriate solutions found in order to ensure that the long-term benefits of these projects are fully realised.

4. Major Constraints

In terms of rural water supply projects, financial considerations and technological options have usually been identified as major constraints. However, it has been realised in most cases that the successful removal of these constraints by the provision of external funding has not guaranteed wider coverage and sustained supplies. This has been the case in most of the communities in the Ketu district.

In their desire to improve the quality of life in the rural areas the Government and some NGOs undertook to provide water at no cost to the village populations. However, as indicated above, many of these projects have not fully met the needs of the people. The implication here is that there are some social and technical problems that need to be addressed. Among the major social and technical set-backs identified are lack of active community participation, lack of public education, hydrogeological conditions, high salinity and the operation and maintenance of handpumps.

4.1 Lack of community participation

The indispensability of community participation in ensuring sustainable water supply at the village level cannot be over-emphasised. Many of the projects in the district have proved unsustainable due to lack of involvement by the people. One major reason which has brought about this situation is that many organisations executing water projects assume all decision-making and managerial responsibilities and then proved unable to meet the long-term commitments. This leads to lack of the sense of ownership of water supply facilities by the inhabitants.

It is interesting noting that in most cases, the hand-dug wells and dug-outs financed by local communities are properly maintained. On the other hand, most of the projects financed by the Central Government are not functioning. This is clearly depicted in Fig. 2 where 34% of the total number of 25 boreholes financed by the Central Government have broken down.

To ensure a meaningful community participation, opportunities must be specifically created which will involve the beneficiaries at all stages of planning, design and implementation of projects. At the local or community level therefore, a conscious effort should be made to establish local channels for information dissemination, education and activities within project objectives geared towards the active participation of members of the community, identifiable groups and non-governmental organisations.

In almost all cases, participation and co-operation induce the payment of fees for services. Experience has shown that cost has to be incurred to actively involve resident groups, NGOs and others for water projects. Unfortunately, there is usually the lack of zeal for participation when it comes to the payment of fees by the communities and until the communities are educated to realise that the benefits of water projects far outweigh the cost of involvement, most water supply projects will not fully meet the needs of the people.

4.2 Lack of public education

In most of the rural communities in the district a greater percentage of the people have very low level of knowledge of the benefits to be derived from potable water supply and also adhere to the traditional beliefs that some of the water sources are gods. There is therefore the lack of community demand for improved water and sanitation facilities and services. This invariably affects their attitude towards water supply projects with the result that many people are very indifferent to the provision of potable water in their area.

A hygiene education programme and public awareness campaigns which stress the benefits of water projects will motivate the communities to participate in water and sanitation activities. An organisation that has taken the initiative in this direction is the World Vision Ghana Rural Water Projects (WVGRWP). This organisation has set up an Animation and Sanitation (ANISAN) Department, which undertakes the education of the communities where WVGRWP operates (Reynolds, 1993).

4.3 Operation and maintenance of handpumps

The operation and maintenance of handpumps installed on boreholes is a key issue in rural water supply. The successful resolution of this issue determines to a large extent how sustainable a water supply system can be in a rural community. In Ketu district, the five main actors in handpump installation and maintenance are GWSC, World Vision International, EP Church and the defunct VORADEP. The operators of handpumps are the 10 user communities.

At present, there is no coordinated effort between the actors and the user communities to obtain a permanent solution to the problem of maintenance. Individual efforts, either on the part of one actor or a user community, is currently the main stay of handpump maintenance. Due to the poor organisation of maintenance, local skill for repair work has not been developed, funding is limited and replacement parts are usually unavailable close-by.

In a community such as Dzodze, extreme factors like vested local interest in "water selling" is a major hindrance to sustaining the handpump installations. Local hostility on the part of those making a livelihood from "water selling" has actually led to vandalism resulting in the deliberate destruction of some communal handpumps.

4.4 Hydrogeological constraint

The main hydrological constraint is the problem of shallow groundwater development in the district. About 40% of the district which is underlain by crystalline rocks and Eocene Cretaceous shale and mudstones have practically no potential for shallow groundwater development by means of hand-dug wells. Areas with such a critical problem are the northern parts of the district and Dzodze-

Penyi area. In such areas, the only options for rural water supply are costly boreholes or rainwater harvesting.

Previous attempts by the Ketu District Administration to sink shallow wells in the basement area has so far proved futile.

With regard to existing wells, there is a periodic silting up of wells and depressed water levels during the dry season. The low yields available from these wells are usually insufficient to meet the demand in the communities or households relying on wells. At the peak of the dry season in February-March 60% of the wells have less than 1.0m height of water and 82% have less than 2.0m height just before the early morning rush. There is, therefore, a severe water crisis in the greater part of Ketu District as a result of these factors.

4.5 Salinity problems

From Fig. 2, 36% of the boreholes examined were abandoned. The main reason given by most communities for rejection is the high salinity of the supplies.

In the district most of the boreholes and hand-dug wells located along the coast have saline problems. The total dissolved solids is a water quality parameter which indicates the amount of dissolved substances in water has a direct relationship to salinity. Available data on boreholes and hand-dug wells in the coastal areas shows that the total dissolved solids of most supplies fall within the range 1200-9500 mg/l (WRRI, 1994), which is very high. This implies that most of the supplies will have very high salinity which will limit its usage.

This constraint discourages both the government and the non-governmental agencies from investing in the provision of groundwater in areas especially along the coast.

6. New strategy for rural water supply

From the above discussions, it is very clear that to increase coverage and to ensure sustainability in the rural sector, new strategies need to be adopted and implemented.

In February 1991, the Ministry of Works and Housing with the assistance of the World Bank organised a workshop on Rural Water Supply at Kokrobite in Accra. The workshop was to evaluate progress made in the provision of water to the rural communities and to devise new strategies to overcome constraints encountered. The recommendations adopted at the end of the workshop has the following as its main elements (WRRI, 1993):

- community management of services, meaning ownership and control as the central element of the strategy;
- a central role for the District Assemblies in supporting community management;
- a key role for the government for promoting service provision;
- a role for the formal and informal private sector in the provision of goods and services;
- ensuring equity and wide spread coverage through targeted subsidies supporting basic service levels;
- a demand-driven programme, with self-selection and clear commitment by communities to enhance sustainability; and
- a special focus in women on both the users of water as well as planners, operators and managers of community level systems.

7. Conclusions and recommendations

Among the major social and technical set-backs identified as major constraints to rural water supply in Ketu district are lack of active community participation, lack of public education, hydrogeological conditions, high salinity and the operation and maintenance of handpumps. It is interesting to note that most of the constraints mentioned above are common to most rural communities in the country. This means that a common strategy will be needed countrywide to eliminate or mitigate the effects of these constraints.

The recommendations adopted at the rural water supply workshop focus on overcoming some of the constraints mentioned above and, when implemented, will go a long way to enhance water supply coverage of the rural sector and also to ensure its sustainability. However, these recommendations should not be implemented without carrying out studies of the rural communities. This is because experience has shown that every community may have its peculiar problems and that one needs to do a lot of homework on and with communities before one can proceed to the implementation stage. This involves a process of getting to know the community and of the dynamics that operate within it.

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GENDER AND WATER RESOURCES MANAGEMENT; INTEGRATING OR MARGINALISING WOMEN?

by

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Introduction

The context in which policies in relation to water resources are formulated has profoundly changed over the past decade. Whereas once the emphasis of policy makers was on the need for planning the provision and use of water resources and the identification, design, appraisal and implementation of projects, now the emphasis has shifted to the task of managing water resource systems. The key idea is that of the state ceasing to be a provider of water resources, and instead being a promoter and facilitator, creating an enabling environment for others to provide and use water resources. The policy focus has shifted from projects to programmes; from the micro level to the macro level. The emphasis is on integrating water related activities as a "sector" which is given coherence by the establishment of an environment by governments and external agencies in which communities can themselves construct, operate and manage improved facilities. (cf Briscoe and deFerranti, 1988, p9)

International policy statements, promulgating this new approach do make referance to the importance of women's role in relation to water and sanitation, but there is cause for concern that these references are simply added on to policies which do very little to enhance women's powers of water resource management, and in several respects may actually be undermining it. This paper considers the extent to which the sectoral programming approach to water is gender aware and steps that might be taken to increase the level of gender awareness. It draws on the work of Diane Elson on structural adjustment and gender and that of Frances Cleaver on informal resource management in Nkayi District, Zimbabwe.

The Changing Context of Water Policies

At the beginning of the International Drinking Water Supply and Sanitation Decade in the 1980's the central role of the state in the provision of water resources was recognised and generally accepted. Water and sanitation were perceived as basic needs which could be provided for through effective central government planning (Lee 1992). The Mar del Plata Action Plan adopted at the United Nations Water Conference in 1977 defined this role, adding community participation as a necessary part of government planning and decision making (United Nations, Report of the

United Nations Water Conference, Mar del Plata, 1977). The Water Decade of the 1980's however, coincided with a period of economic stagnation or decline in many countries and with a general reconsideration of the role of the state in the economy. This lead to the widespread adoption of economic structural policy reform, aimed at reducing the role of the public sector and giving a greater role to the market and the private sector in the economy.

In the case of water, despite intense activity in providing new water supplies throughout the decade, problems of financing were accentuated by high population growth rates and difficulties in implementation which rendered many projects unsustainable (UNDP 1990). The influence of policy reforms are strongly reflected in the discussions about the future of the sector. Discussions reviewing the Decade and planning for future directions held at the Global Consultation in New Delhi in 1990 strongly reflect such policies. These influences are also present, if less explicit, in the statement of the 1992 Dublin Conference on Water and the Environment and Agenda 21 of the "Earth Summit" (United Nations Conference on Environment and Development, 1992).

Economic policy reforms, including programmes, can be briefly summarised as being aimed at reducing the role of the public sector and giving a greater role to the market and the private sector in the economy in order to increase efficiency of resource mobilisation and use. Contemporary economic policy reforms typically entail;

- a restructuring of incentives through changes in prices, tariffs and other taxes, subsidies and interest rates

- restructuring of public finance through increases in tax revenue and revenue from charges for publicly provided services, reduction of subsidies, freezing of public sector wages and limiting public sector employment

- restructuring of institutions through privatisation of public sector enterprises and encouragement of the activities of non-governmental organisations in service provision. The emphasis is on improving welfare via growth in GNP and improvements in productivity rather than in redistribution of resources

The principles of the New Delhi statement (see appendix) echo these main themes. Two of the four principles are directly concerned with such reforms.

Principle Two for example states; "Strong institutions are essential for sustainable development.....A changing role of government is envisaged, from that of provider to that of promoter and facilitator. This will enable local public, private and community institutions to deliver better services. Decentralisation demands a strong policy and support role from central governments, while local private enterprise can assist in improving the efficiency and expansion of service delivery."

Principle Four which is directed at increased financial efficiency in the sector and a major aspect of this is cost

recovery from the users "there must be widespread promotion of the fact that water is not a free good." The Dublin statement is very similar in its emphasis that water " should be recognised as an economic good".

Principle three is of great importance in that successful implementation of the other two depend on it. It is concerned with community involvement and is couched in the language of empowerment and equity. " Community management goes beyond simple participation. It aims to empower and equip communities to own and control their own systems. Community mnanagment is the key to sustaining services for the rural poor and is a viable option for poor urban settlements. " The Dublin statement and Agenda 21 place less emphasis on 'ownership' but both adopt the approach that decisions should be undertaken at the 'lowest appropriate level'.

The role of women in relation to water resources is referred to under Principle Three. "Women should be encouraged to play influential roles in both water management and hygiene education. Capacity building is necessary to make community managment effective and enable women to play leading roles." The Dublin statement also recognises the importance of women and suggests that positive poliices are required to address womens' needs and to 'equip and empower'them to participate.

However, despite the references to empowerment, the apparent motivation for an emphasis on women is highly instrumental. In the Background Papers to the New Delhi Conference one of the eight lessons of the decade is clearly spelt out;

" A focus on the role of women, among the poor and uunserved, can enhance the sustainability of basic improvements in water supply and sanitation services" (UNDP 1990)

Different Approaches to Water Issues.

In most countries water supplies are dealt with by a variety of government ministries ranging from Agriculture through Urban Development to Community Affairs. Three main approaches to water issues can be identified (although recognising that these encompass a number of professional areas); these being from the infrastructure, health and natural resource perspectives.

The infrastructuralists approach water largely in terms of formal systems for providing and managing facilities for supply. Technology led and dominated by professionals (engineers and economists) the infrastructure approach is instrumental, the main aim being to get facilities installed and functioning properly. User involvement is therefore primarily seen in terms of the payment for and maintenance of the water supply facilities. The level of analysis is generally at the point of supply (waterpoint). User groups are defined in terms of their relation to a particular supply. This approach lends itself to the quantification of costs and benefits and to a focus on formal institutions. Assumptions about user involvement are made on the basis that the user is taking decisions based on a given structure of preferences and are concerned with identifiable

economic benefits (eg Najlis and Edwards 1991) There is little concern with what happpens to the water within the household. Whilst satisfaction of essentially qualitative basic needs is acknowledged as a goal, much of the infrastructure appproach is concerned with water for productive purposes; examples being the building of dams and irrigation canals. Urban-industrialised models of infrastructure provision are commonly applied.

Secondly there is the health approach focussing much more on basic needs and the processes necessary to meet them. Based on primary health care principles, there is an emphasis on the concepts of access for all and universal coverage. This is because the benefit that an individual can derive from access to clean water is not dependent on their own access only but also on that of everyone else in their community. Externalities are all pervasive in the field of health. This approach to water is also concerned with the complexities of how users relate to water reosources at all levels and with individuals and families rather than with groups. The question of personal behavioural change is important and this is translated into a concern concern with peoples' interaction with water resources (protected and uunprotected) and their hygiene behaviour, particularly in the home. The emphasis is on prccesses; learning and communication, rather than on structures. The importance of gender differentiation, particularly within the household is recognised. The health approach incorporates strong formal and informal roles for women as educators and professionals. There is a much documented difficulty in quantifying the health benefits of improved water and sanitation but this is accepted as one of the difficulties of the strong interlinkages and multitude of factors affecting health status. Practioners therefore concentrate on getting the processes right in the faith that benefits will then ensue (see for example WHO, Minimum Evaluation Procedure 1983).

Thirdly there is the natural resource approach which can be seen to encompasss both environmentalists and the agriculturalists. The focus is wider than that of the infrastructure approach as there is a recognition of the need to look at all the water resources of an area including those provided by nature as well as those facilities provided by the engineers. Local institutions are important as the user-managers of water resources of all types. Issues of distribution and regulating usage are of prime importance. Indigenous knowledge and management systems are recognised here.

The creation of a water sector

It is debatable whether the water 'sector' exists in the same way as a health sector or an education sector, given the multiplicity of ministries dealing with water. Nevertheless there are strong commonalities in the 'enabling environments' which are supposed to be established for all water realted activities. The characteristics of the sectoral programming which is thus emerging are influenced to some extent by all three of the approaches discussed in the previous section. But the dominant approach is the infrastructure approach.

There has certainly been a shift of emphasis within this approach

from a predominant emphasis on engineering of water resources to a predominant emphasisi on the economising of water resources. but the focus is still on quantifiable economic benefits and formal structures. It is simply that the instruments have changed.

This emphasis gives cause for concern that despite references to the need to promote the full participation of women at all levels in sector institutions, women's participation will not be enhanced and may even be reduced.

Forces displacing women in the management of resources.

There are a number of forces which currently act to displace women from positions of influence and control over resources which they may already have in the sector. Where women do already legitimately have some influence this is likely to be eroded by current policies. Three forms of this displacement are identified here;

a/ The marginalisation of health issues.

The influence of economic policies in the sector and the move towards viewing water as an economic resource shifts the emphasis away from the area of health in which women have recognised interests and a strong professional presence.

The contention here is that current policies are deliberately underplaying the value of approaching water from a health point of view. (It should be noted that most policies present the improvement of human health and well-being as their ultimate goal but that this may be only loosely related to current policies.) For example Edwards (1993) writes

" The emerging issue, common to all domestic consumers, is that water is an economic good, and in spite of the high social and health benefits accruing from a plentiful supply, the price of water must be more closely aligned to thye economic cost of supply." (Pg60)

Much current thought is devoted to devising ways of valuing the economic rather than the health and social benefits of water as these can be more easily quantified. It is believed that investment in the sector is more likely to be forthcoming if it can be justified in terms of economic returns (UNDP 1990, Briscoe and deFerranti 1989, Churchill 1987). Churchill offers an extreme example of this approach suggesting that there is a very tenuous link between improvements in health and investments in water and sanitation services, and therefore effort should be concentrated on proving and calculating the non-health benefits of water. Evaluating the benefits of sanitation programmes are conveniently ignored (Churchill 1987).

This tendency may be highly questionable for two reasons. By underplaying potential health benefits of improved water and sanitation the recognised role of women as hygiene educators and practicers at the household level (Wijk-Sibesma 1985) receives

less emphasis. Funds are less likely to be obtained for health education, so establishing a vicious circle as without education and promotion activities, health benefits are unlikely to be forthcoming and therefore the policy for downplaying them appears justified. Moreover, women may be still recognised as those 'responsible' for hygiene improvements without having any command over the resources necessary to implement them. They can then be 'blamed' for the absence of substantial health benefits.

Secondly the shift away from health as a focus and the simultaneous weakening of government provided health activites (as a result of cuts in public expenditure) precisely hit a sector in which women have a recognised professional. There are probably more women professionals in health than in most other sectors (with the possible exception of education) and therefore more women in positions which enable them to implement gender aware policies.

b/ commoditisation of water

The concept of water as a basic human need is being overshadowed by the idea of water as a commodity. The New Delhi Background Papers describe one of the problems of the water sector as follows;" often, service delivery is organised around the assumption that people have basic needs for water that need to be met, rather than around the actual demand and willingness to pay for these services." (Pg25)

A recent commentator wrote " The concept of water as a free good is finally on its way out, and there is a growing consensus on the need to charge for services... " (Najlis and Edwards 1991). The Dublin statement claims that " Managing water as an economic good is an important way of achieving efficient and equitable use..". Approaching the sector from an infrastructure point of view facilitates the definition of water as a commodity rather than a resource. The commoditisation of water (enabling it to be privatised, sold and attributed a market value) shifts the focus towards so-called 'productive' water with quantifiable monetary benefits and raises the issue of ownership and property rights.

The common division between 'domestic' and'productive' water has in the past reflected the sectoral division between water for health and basic needs (domestic) and water for agriculture and industry (productive). The division is a false one, particularly at the household level where 'domestic' water may be used for a variety of subsistence income generating purposes commonly undertaken by women; the keeping of small livestock, brewing beer for sale, brick moulding, vegetable growing and so on. However, recognising the productive possibilities of domestic water is another matter from assuming that all water has an economic value and that which does not is not worth investing in. There is a danger that despite all the pronouncements about equity and meeting basic needs, the focus will shift dramatically to supplying water where the economic benefits are obvious, substantial and quantifiable to the neglect of those cases where the economic benefits are far from clear. There are already major gender differences in the use of water resoures for productive

and domestic purposes. Men predominate in the use of productive water (for irrigation and for watering cattle) whereas women are only dominant in the 'domestic' sector. Research in Nkayi for example showed that only men were on dam committees (for cattle watering) whereas hand-dug wells , used primarily for domestic purposes were almost the exclusive domain of women. At boreholes, used for both purposes, the user profile was mixed and conflicts arose over the priorities of different users with cattle watering generally taking precedence over domestic usage.

Another aspect of commoditisation is the issue of property rights and ownership. The desirability of 'ownership' is a much repeated and rarely challenged theme in the sector. Ownership of water supply facilities being associated with responsible water use and improved operation and maintenance;

" Community management goes beyond participation to encompass ownership of and responsibility for water supply and sanitation services..... The community based organisation should have legal authority to own land, employ people, maintain a bank account or its equivalent and collect user fees' New Delhi Background Paper p25-p27).

The creation of property rights over any resource inevitably involves the exercising of these rights and the ability to exclude others, ie non-owners. We know that women are in a disadvantageous position to exercise property rights, particularly over productive resources, and there are difficulties with them doing so over land, livestock, even their own labour (Elson,1992). It is optimistic to assume that investing 'ownership;' of a water source in the community will mean equal exercise of womens' rights over that resource, and far more likely that the creation of ownership rights will increase opportunities for the rich and powerful to appropriate preferential access to the resource.

In addition the creation of private property rights and the commoditisation of water may lead to the undermining of relationships of reciprocity and of indigenous hardship survival mechanisms. An example from Nkayi illustrates this. Communal hand-dug wells, implemented by the LWF or UNICEF in the 1980's, had been installed with the participation of the users who were mobilised and trained to accept the principle that by contributing to implementation they had somehow 'paid' for the well which they now 'owned'. The regular user community could be defined as the ten or fifteen families living in the immediate vicinity of the well, who had participated in implementation. However, there could be at least that number again of occasional users; those from further away whose nearest source was broken or dry. Their usage of the well was in accordance with the strong traditional principle that noone should be excluded from using a water source. However, when these wells started to dry up during the drought, the regular water user community started to impose restrictions on the use of the well, limiting pumping to certain times of the day and closing the wells at other times so making it very difficult for occasional users to draw water. They had to plead, wait for until everyone else had taken to draw any residual water in the well and, if still unsuccessful, go

elsewhere. The very definition of an 'owner' community meant the exclusion of others in times of scarcity and the contraction of traditional reciprocal rights of acccess, critical to survival in dry lands. Those excluded from easy access to water tended to be the more marginal households who had less adequate facilities and little influence. It is ironic that success in achieving one of the declared policy goals of a sense of ownership and responsibility is likely to be detrimental to the avowed aim of equitable access to water for all.

c/ Formalisation and bureaucratisiation

One of the emphases in the New Delhi document is on stengthening institutions (by which they generally mean strengthening organisations). Much of the effort in implementing community management is put into formalising such involvement through committees, contracts, the delineation of responsibilites, making the community in many respects the lowest tier of government structures. For example waterpoint committees or water users associations are established linking into village development structures, with their own Chairman, Treasurer and Secretary. The New Delhi Papers talk of various levels of community management on a spectrum ranging from the extended family caring for a spring at one end to a public works agency, parastatal or private sector company providing water to large numbers at the other end. It is asserted that " These differences are only ones of scale, cost and complexity, the basic model remains the same." Far from effectively devolving responsibility this in fact makes it far less likely that women will be able to exercise real power, local government and politics being efffectively dominated by men.

Such bureaucratisation pays little attention to axisitng informal institutions for water resource management, which may have been developed and mostly operated by women over many generations. These often remain invisible because they do not exclusively involve 'productive' sources of water and because management is largely through rules-in-use and compliance almost universal (Ostrom ? Date). An example is a traditional management system over an important water source in Nkayi, the Shangani River. Local people believe that the river cannot be owned and therefore access is free to all. However there is a comprehensive system of rules and regulations relating to the river and ensuring the good condition of water taken from it. The river is dry for most of the year and water obtained by digging holes in the sand. Drinking wells are dug in the middle of the river bed where the sand is cleanest and where the water underneath is flowing fastest. The drinking wells are always communal, shared between neighbouring families, to minimise the dangers of witchcraft and poisoning. Drinking wells commonly have a tin sunk into them to prevent them from collapsing and are covered to protect them from animals. Water for gardens and washing clothes is taken from wells dug at the dirty margins of the river. They may be individual but anyone can use such a well if they come across them. Noone washes clothes near any well, soap always being used at some distance away and the water carried from the well to that spot. There are designated perrenial pools for cattle watering and specified sites for mens and womens washing. There is also

a special place in the river reserved for the rain-making ceremonies of spirit mediums or church services to pray for rains. Noone is responsible for enforcing this system of management and there is very little non-compliance, the most serious cases reported being children leaving the lids off drinking wells. District officers however believe that people use dirty water from the river and that the solution is to encourage them to use and participate in the management of wells and boreholes for which they must be mobilised and trained.

The 'myth' of the community.

The community is a prime focus of current policy documents and community management presented in some as a universal panacea to the problems of the sector.(.....) However, there are very few attempts to define the community concerned and a great deal of conceptual ambiguity about the nature of the community. Briscoe and de Ferranti make some grandiose claims for community management;

" Improvement efforts are more likely to meet felt needs. Investments are more likely to be well spent. New projects are more likely to be completed and kept in service.... As a result, the country's overall resources are likely to be more effectively utilised.

No less important , more communities are more likley to get safe water sooner and, because of that, water sector policies and programmes will be better instruments to help alleviate poverty, improve the lot of women and increase equity."

a/ The unitary community

The literature and policy documents conflate the concepts of a water-using community with a decision-making community but these are not necessarily one and the same. (It is only possible to see them as such if taking a narrow waterpoint approach, the waterpoint committee being made up only of users of that point.) The gender profile of each is likely to be very different. In practice the water using community is likely to predominantly comprise of women where the decision-making community is far more likely to be male dominated. The two communities may not be coterminous as eclectic patterns of water usage rarely fall conveniently into simple administrative boundaries, traditional or modern. The establishment of waterpoint committees or water user associations (even with a majority of women members) may be unsuccessful precisely because they comprise the water-using rather than the decision-making community and because their remit is so limited. At local level other communal resources such as grazing lands are subject to an area level decision making process, usually dominated by older men. (In Nkayi all nearly all decisions regarding the allocation and regulation of resources were taken at the Village or Ward Development Committee meetings despite the existence of specific committees for a variety of other activities.)

b/ The competent and resourceful community

According to the policy documents, the community is to prove competent to undertake most of the tasks in which governments have failed; identifying needs, choosing technologies, providing adequate funding, implementing to a high standard and maintaining facilities indefinitely. Perhaps the most ambitious idea about community competence is that they will be able to solve complex distributional issues which existing implementing agencies shy away from.

New Delhi would have us believe that " An acceptable level of cost recovery will require decisions on what prices to charge to whom and for what services. .... the ultimate decision rests with the local or community decision makers..."

In irrigation systems the organisational complexity of devising equitable and collectable tariffs for water has led some implementing agencies to levy a bulk tariff on a farmers group, leaving the group itself to decide on the contributions of individual members. Mick Moore comments critically on this "It is an interesting paradox that, in extremis, the practical viablity of market principles should be perceived to depend on local, non-market patterns of social interdependence and hierarchy" (Moore 1989)

c/ The equitable community

There is a related assumption in the literature that 'the community' is a philanthropic social entity concerned with ensuring distributional equity amongst its members. In fact it is clear that many communities are based on strong principles of hierarchy; access to and distribution of resources within them being dependent on the place occupied in the hierarchy. Indeed it could has been claimed by Torry (....) that certain people have been pre-selected within social structures not to receive equal access to such resoures. Ensuring that all survive is not the same as striving for equality, which may not be strong principle in many societies. An example from Nkayi can illustrate this in a simple way. At Mtswirini well a restricted hours rule was introduced as the dry season progressed to preserve the limited supply of water until the next rains. However, although this could have meant that everyone received at least minimum supplies of water, no attempt was made to ensure that this limited supply was distributed equitably. Water was taken on a first come, first served basis. People would place their buckets at the pump to queue before the well was opened. There was no restriction on the number of buckets one person could place in line. My host household was relatively wealthy (both of the adults were schoolteachers) and had a number of teenage children and a full time domestic worker able to queue and collect water. On one occasion, buckets from this household occupied the first five places in the queue. The water generally ran out after twenty buckets had been drawn and those at the back of the queue had to try their luck elsewhere . Unsuprisingly this family had much higher water use than other members of the community (12 litres per person per day as opposed to a more common 8).

In such circumstances, households with more able bodied women and children (and more buckets - an expensive item) are able to gain preferential access to water supplies. Poorer households, particularly female headed ones with only very young children are likely to occupy a poor position in terms of access to and control over water resources. They are also less likely to be able to 'buy' ownership rights through contributions to implementation of the waterpoint.

Gender Awareness in Sectoral Programming for Water

The keys to achieving greater gender awareness in sectoral planning for water resources are

(i) understanding that actors in the sector are differentiated by gender
(ii) understanding that policy instruments have different implications for men and women.

The language in which the management of a water resource system is described and analyzed appears to be gender neutral:
For instance,

> "Users must decide on the type and improvements to be made
> Users must pay most of the costs of the chosen services
> Users must take responsibility for maintaining the facilities they have chosen and built.
> Governments and external agencies must establish which communities can construct, operate and manage improved facilities" (Briscoe and de Ferranti, p.9).

Other favourite words are "consumers", "communities", "households", "public sector", "private sector", "stakeholders", "participants", "NGO's".

There needs to be an awareness that all these collective nouns mask important social differentials, of which gender is one. The problem is that formal representation of users, consumers, communities, households, government agencies etc is male biased. Policy makers and analysts need to investigate the form and extent of differences between men and women as users, consumers, providers, managers etc.

There is some sensitivity to this issue on the part of some analysts. Thus Briscoe and de Ferranti note, that some community members are more interested than others in improving certain types of water supply, and that this affects their willingness to pay for improved facilities. In Zimbabwe, they claim, women are willing to pay 40 per cent more than men for an improved water supply. However, the solution to gender differences is seen as increasing the participation of women in a system of management that has already been designed, through training and other activities to enhance the capacity of women. This fails to tackle the question of whether the system itself needs redesigning to make it more "women-friendly"!

The emphasis on users taking responsibility does not mean that policy makers are withdrawing from the water sector. Rather it means a different choice of policy instrument. Public expenditure organised around budgets is being replaced as the key policy instrument by cost-recovery procedures:

> "There must be widespread promotion of the fact that safe water is not a free good" (New Delhi Statement,p.6)

The policy makers will require communities to recover the full cost of water facilities and provide guidelines on what charges to levy and how to levy them.

There is a certain ambiguity on the part of some analysts about the question of the ability of poor households to pay for water facilities. On the one hand we read statements such as:

> "There are undoubtedly some rural areas where cash is simply not available, but even in these areas very poor household usually have some resources - in particular their own time - to contribute to constructing and maintaining service improvements." (Briscoe and de Ferranti,1989,p.13).

On the other hand, the same authors tell us that one of the key benefits of improved water facilities is to save time, implying that households do not have spare resources of time.

Here it is important to investigate gender differences in time use and spare time. Whereas improved water facilities may be of considerable benefit to women because it is women who have to spend time collecting water, women may lack the ability to pay in cash for improved facilities because of the lack of opportunities, to transform spare time into spare cash; and women may lack the ability to pay in time, by investing time in the construction of new facilities because they cannot take time off from current duties. Moreover, the prevailing gender division of labour may inhibit women from undertaking some kinds of construction activities. On the other hand men may indeed be able to pay for improved facilities either in cash or through devoting spare time to the construction of facilities, but they may be unwilling to do so, since they may attach little value to saving women's time; or may regard water as women's responsibility.

Thus the analysis of willingness of users to pay must be sensitive to gender differences in household resource use patterns, taking account of the fact that in general not all income of household members is pooled and shared; and that different household members often have responsibility for supplying or purchasing different items. Thus men and women are likely to give different answers to the question of how much they are willing to pay for water facilities.

If cost recovery is to be the centre piece of the management of water for the future then policy makers must not only promote the idea that safe water is not a free good, they must also promote the idea that women's time is not a free good.
But they must also go beyond this and recognise that women's time is systematically undervalued, by the market, by men and by women themselves, because of the social pressures and obligations and constraints and even coercions which tend to lead women to put the welfare of others before their own. This means that reliance on the metric of money and market forces to manage water resources is going to lead to systematic under-investment in water resources, and that some use of subsidies is justifies to counter what Palmer (1991) refers to as gender-based market distortions.

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