Country evaluations of the support by the Netherlands to sexual and reproductive health and rights programmes in Mali and Nicaragua

Nicaragua study - Inception Phase

Research proposal

23rd December 2010

Authors: Meg Braddock, Esther Jurgens, Hermen Ormel, Alejandro Uriza and Jos Vaessen

P:\CRYSTAL\COMMON\PROJECTS\104478\IOB IMPACT EVALUATION SRHR\REPORTING\IOB IMPACT EVALUATION SRHR NICARAGUA - FINAL REPORT

Consortium: ETC, Ecorys, KIT, CDR
p/a ETC Crystal
P.O. Box 64
3830 AB Leusden
The Netherlands
Tel: +31 33 4326030
crystal@etcnl.nl
www.etc-crystal.org

Table of contents

Table of contents 1
Acknowledgements 2
Glossary 3
1. Introduction 4
2. Country context and Netherlands support for SRHR interventions in Nicaragua 5
2.1. Description of the context 5
2.1.1. Country context and health indicators 5
2.1.2. Structure of the health sector 6
2.1.3. Sexual and reproductive health and rights (SRHR) context 8
2.1.4. Policy context 8
2.2. Overview of Netherlands support for the health sector 9
3. Selection of an intervention for the impact study 13
4. Description of the selected intervention 20
5. Scope of the impact study 25
6. Proposal for methodological design 28
6.1. Methodological options for assessing the effects of the intervention and related questions of interest 28
6.2. Data collection and analysis 34
7. Team composition, management arrangements and budget 39
7.1 Research team 39
7.2 Tentative schedule 41
8. Tentative budget 42
References 44
Annexes 46
Annex 1 Mission timetable and people met 47
Annex 2 Policy framework of SRHR 48
Annex 3 Other relevant projects supported by EKN in the study period 50
Annex 4 Preliminary mapping of cervical cancer screening programmes 52
Annex 5 Ixchen data on project coverage 55
Annex 6 Relevant variables available in the ENDESA 2008 database 56
Annex 7 Guidance for sample size determination 57
Annex 8 Options for collaboration with local partners 58
Annex 9 Country specific ToR for Nicaraguan study 60

Acknowledgements

The team would like to thank all the people who participated in the interviews and discussions during development of this impact study proposal, including management personnel within the Ministry of Health and other government departments, management and staff of the UNFPA and NGO projects which were considered for selection, local research and consultancy organizations, and people from other national and international institutions who contributed with their local knowledge and analysis of the major issues in SRHR during the study period.

We would also like to thank the staff of the Embassy of the Kingdom of the Netherlands in Managua for their support in programming the inception mission's meetings and for their ample participation in meetings and discussions of the Mission's findings and proposals.

The DGIS IOB Reference group for the SRHR Impact Evaluations Mali & Nicaragua offered important critiques and suggestions on the draft inception report; the final report has benefited considerably from these, for which we are grateful.

The authors furthermore thank their colleagues at ETC, Ecorys and CDR for their review and inputs, with special thanks to Leon Bijlmakers, Joanne Harnmeijer and Arthur ten Have.

Glossary

CDR	Centro de Estudios para el Desarrollo Rural
CIES-UNAN	Centro de Investigaciones y Estudio de la Salud, Universidad Autónoma de Nicaragua
CPR	Contraceptive Prevalence Rate
CSO	Civil society organisation
EKN	Embassy of the Kingdom of the Netherlands
ENDESA	Encuesta Nicaragüense de Demografía y Salud (Demographic Health Survey or DHS)
FGD	Focus Group Discussion
FONSALUD	Fondo Nicaragüense para la Salud
GDP	Gross Domestic Product
HDI	Human Development Index
INSS	Instituto Nicaragüense de Seguro Social
ITM	International Team Member
IOB	Policy and Operations Evaluation Department of the Netherlands Ministry of Foreign Affairs
KII	Key Informant Interviews
LAC	Latin America and the Caribbean
MASP	Multi-Annual Strategic Plan
MCH	Maternal and Child Health
MDG	Millennium Development Goal
MINSA	Ministerio de Salud (Ministry of Health)
MMR	Maternal mortality ratio
NGO	Non-Governmental Organization
NHP	National Health Policy
PAHO	Pan-American Health Organization
PSI/PASMO	Population Services International/Pan-American Social Marketing Organization
RAAN	Región Autónoma Atlántico Norte
RAAS	Región Autónoma Atlantico Sur
SILAIS	Sistema Local de Atención Integral en Salud
SRH	Sexual and Reproductive Health
SRHR	Sexual and Reproductive Health and Rights
STI	Sexually Transmitted Diseases
TFR	Total Fertility Rate
TL	Team Leader
WHO	World Health Organization

1. Introduction

This impact study is one of a series of impact evaluations in the field of sexual and reproductive health and rights (SRHR) to be carried out by the Policy and Operations Evaluation Department of The Netherlands Ministry of Foreign Affairs (IOB) during 2010 and 2011. The studies are aimed at identifying the relevance, effectiveness and efficiency of the Dutch contribution in selected countries, which include Nicaragua, Mali, Bangladesh, Ghana and Tanzania. The focus will be on the outcome (i.e. access to and utilization of services, including family planning; quality of services) of health and SRHR programmes supported by the Netherlands, between 2004 and 2009.

The study in Nicaragua will be carried out during 2010 and 2011, and consists of two phases: the inception phase which is the subject of this report and will be completed by December 2010; and the implementation phase which will be carried out during 2011.

During the period to be covered by the impact study (2004-2009) the Netherlands have provided sector support for health, programme support for UNFPA and UNICEF, and project support for several non-governmental organizations (NGOs) in the area of SRHR. As sector support has been explored in previous evaluative work, IOB's terms of reference for the impact study indicated that the work should focus on Dutch support for UNFPA and NGOs.

This report on the inception phase includes a brief discussion of the country and policy context, an analysis of the major programmes with potential for inclusion in the impact study, selection criteria and final choice of the intervention to be studied, and details of the proposed study design and methodology. The report also includes a timetable and an estimated budget for the work.

The mission timetable and people met in the inception phase are shown in Annex 1.

2. Country context and Netherlands support for SRHR interventions in Nicaragua

2.1. Description of the context

2.1.1. Country context and health indicators

Nicaragua has a population of 5.6 million and is the second poorest country in Latin America and the Caribbean. Almost half the population live below the poverty level, the Human Development Index (HDI) rank is 124 out of 182 countries, and Gross Domestic Product (GDP) per capita is USD 2,570 (HDR 2009). High levels of inequality exist, including inequality of income and access to services between rural, peri-urban and urban areas, and gender inequality (Gender Development Index of 0.686 - HDR 2009).

Over the past decade the annual population growth rate has been 1.4% per annum, which is comparable to other Central American countries. The average life expectancy is 74 years (WHO, 2010). Nicaraguan indicators on infant mortality (29 per 1,000 live births in 2006) and on under 5 mortality (27 per 1,000 live births) exceed averages in the Latin American and Caribbean (LAC) Region. Infectious diseases remain major health concerns, and many of the childhood illnesses continue to dominate the public health agenda[1]. Tuberculosis which is largely seen as a disease of the poor is relatively high (46 per 100.000 population) which is higher than the Latin America and the Caribbean (LAC) regional average of 38 per 100.000 population.

Inequality in health is closely related to socio-economic conditions and access to health services. Poorer families have higher fertility rates and larger families, as well as higher maternal, infant and child mortality. While the Total Fertility Rate (TFR) dropped significantly from 4.9 children per woman in 1995 to the current 2.7 TFR (WHO, 2010), it is still among the highest in the LAC region and there are large in-country disparities in terms of geographical zones and income levels. Early pregnancy and childbearing are high in Nicaragua, where 1 out of every 4 adolescent girls is pregnant or gives birth before her 20th birthday. Overall the Contraceptive Prevalence Rate (CPR) is 72% and the unmet need for family planning is 7.5%. Almost three quarters of all births take place in an institutional setting (56% in the rural areas), of which 63% are in the public sector.

Nicaragua's maternal mortality ratio (MMR) is estimated at 100 per 100,000 live births (2008), a level much lower than Honduras (280) and Guatemala (290)[2]. Though not considered a 'high risk' country in terms of maternal mortality, Nicaragua faces other challenges in sexual and reproductive health and rights, including the high adolescent fertility rate, the early age of first sexual relation (14% of the women aged 15-24 had their first sexual relation before the age of 14, this figure rising to 20% in the rural areas)[3], the recently introduced ban on therapeutic abortion, high mortality from cervical cancer, and high incidence of gender-based violence.

[1] BEMO Fonsalud
[2] WHO Global health Observatory, http://apps.who.int/ghodata/?vid=14800 (accessed 21 December 2010)
[3] INIDE/MINSA, 2008

There are currently 7,300 people living with HIV registered in Nicaragua[4]. Though overall the prevalence in the country is relatively low, 211 per 100,000 adults (0.2%), UNAIDS figures for the prevalence rate and the number of people living with HIV have risen steadily since the mid-1990's (UNAIDS, 2008). There is also a trend towards feminisation of the disease (from 7 infected men to 1 woman in 1998, to 2:1 in 2006). Data from the latest Encuesta Nicaragüense de Demografía y Salud (ENDESA, 2006/7) show that the level of knowledge of other STIs is relatively low (only 28% of women have heard of chlamydia) and varies significantly with educational level and geographic location. Condom use is low at 7%.

In Nicaragua, cervical cancer is among the leading causes of mortality among women. Some 1.74 million women (aged 15 and older) are at risk of cervical cancer[5]. Mortality from cervical cancer is 26 per 100,000 population, which is the second highest in LAC after Haiti (54 per 100,000 population) (PAHO, 2004). The annual number of cervical cancer cases is close to 900 new cases p.a., and annually there are more than 400 cervical cancer deaths[6].

ENDESA data reveal widespread domestic violence, especially violence against women, with some 20% of all women (aged 15 and older) having experienced at least one incident of physical abuse.

An overview of demographic, socio/economic and health indicators is given in Table 1.

2.1.2. Structure of the health sector

The public sector including the Ministry of Health (MINSA), the police and armed forces is the most important provider of primary health care and hospital services, with MINSA as the principal actor. The public sector covers approximately 68% of the population (PAHO, 2007) although this may have risen in recent years due to policy changes. Only an estimated 8% of the population are covered by the national social security system (Instituto Nicaragüense de Seguridad Social – INSS), with a very small percentage using the private health insurance sector and the remainder using other private sector services.

MINSA is the key authority with stewardship over the sector, including responsibility for policy development, staffing plans, staff qualifications, regulation and medical protocols, accreditation, epidemiological monitoring, supply of essential medicines, etc. The system is decentralised, with the SILAIS (Sistemas Locales de Atención Integral a la Salud) being responsible for administration and service delivery at Departmental, municipal and health unit level. There are supply-side problems in the public sector including shortages of staff, infrastructure, equipment and supplies, leading to low quality services especially outside the main urban areas. Since the change of government in 2007 and the new health policy of 2008 (see below) basic public sector services and medicines have been free, but shortages mean that users still have to make considerable out-of-pocket payments for medicines.

Overall health expenditure is USD 93 per capita p.a., of which about half is public sector spending. Most of the remainder is private spending, almost all of which is out-of-pocket expenditure (an important indicator of inequality in access to health services).

[4] INIDE/MINSA, 2008
[5] WHO/ICO HPV information Centre, 2010
[6] WHO/ICO HPV information Centre, 2010

Table 1: Nicaragua: selected demographic, socio-economic and health statistics		
	Indicator	**Level**
Demographic and socio-economic	Total population (millions)[1]	5,6
	Population living in rural areas (in %)[1]	43
	Life expectancy at birth – both sexes (years)[1]	74
	Population under 15 years of age (%)[1]	36
	Annual population growth (average 1998-2008)[1]	1.4
	GNP per capita in (USD)[6]	2,570
	Population living below national poverty line (less than 1 USD per day, %)[1]	15.8
Mortality and burden of disease	Adult mortality rate (per 1000 adults 15-49 years)[4]	164
	Infant Mortality Rate (per 1000 live births, in 2006)[2]	29 (23*)
	Under 5 Mortality Rate (per 1000 live births)[1]	27
	Prevalence of HIV among adults aged 15-49 years (%)[1]	0.2
	Prevalence of tuberculosis (per 100.000 population per year)[1]	46 [41-56]
Sexual and reproductive health	Maternal mortality ratio (per 100,000 live births)[1]	170 [120-1230]
	Total fertility rate[3] *Urban* *Rural*	2.7 *2.2* *3.5*
	Adolescent fertility rate (per 1,000 girls aged 15-19)[2]	106
	Contraceptive use among women married/in union, modern methods, aged 15-49 (%)[3] *Urban* *Rural*	72 *75* *69*
	Unmet need for family planning women aged 15-49 (%)[1]	7.5
	Cervical cancer mortality rate per 100,000 population (in 2000)[5]	26
Health service coverage	Antenatal coverage – at least 1 visit (%)[1]	90
	Antenatal coverage – at least 4 visits (%)[1]	78
	Institutional births (total, in %)[2] *Urban* *Rural*	74 *92* *56*
	Births by caesarean section (in %)[1]	19.6
	Immunisation coverage among 1-year-olds – average (%)[1]	97
	ART coverage of people with advanced HIV infection (%)[1]	30 [11-43]
	Smear-positive tuberculosis case-detection rate (%)[1]	94
	Smear-positive tuberculosis treatment success rate (%)[1]	86
Health sector financing	Total expenditure on health as % of GDP[1]	8.3
	Government expenditure on health as % total government expenditure[1]	16.3
	Government expenditure on health as % of total health expenditure[1]	54.9
	Private expenditure on health as % total expenditure on health[1]	45.1
	External resources for health as % of total expenditure on health[1]	9.3
	Out-of-pocket expenditure as % of private expenditure on health[1]	93
	Private prepaid plans as % private expenditure [1]	1.6
	Per capita total expenditure on health (USD) [1]	92
	Per capita government expenditure on health (USD) [1]	51

Sources:

[1] WHO/World Health Statistics, 2010; [2] PAHO, 2009; [3] INIDE/MINSA/CDC, 2007; [4] USAID, 2010; [5] PAHO, 2004; [6] UNDP/HDR, 2009

2.1.3. Sexual and reproductive health and rights (SRHR) context

Although changes in government policies have given different levels of priority to sexual and reproductive health during the last decades, some progress has been made over the years. Since the late 1980's civil society has been active in promotion of a reproductive health and rights approach, and has been instrumental in bringing about changes in policy, and also to some extent in practice. This has been boosted by the relevance of certain aspects of sexual and reproductive health to achievement of the Millennium Development Goals (MDG) and to implementation of poverty reduction policies, and the opening-up of debate and discussion of formerly taboo themes resulting from the threat of the HIV/AIDS epidemic. Draft sexual and reproductive health strategies and plans were drawn up by MINSA in the 1990's but it was not until 2008 that a full SRH strategy was developed[7].

Sexual and reproductive rights have had a more chequered development, with continuing problems of machismo, gender inequality, poor access to sexual and reproductive health services for particular groups such as adolescents, and on-going discrimination against those with different sexual orientations. There was a major set-back to SRHR in the run-up period to the elections 2006, with legal changes which prohibited therapeutic abortion and which are still in place.

2.1.4. Policy context

The key contextual policies for SRHR during the study period are the National Health Policy 2004-2015, the new National Health Policy of 2008, the conceptual framework for the Family and Community Health Model of 2008, and the National Reproductive Health Strategy of 2008. The main features of these policies which are relevant to SRHR are shown in table 2. Other policies which are relevant to SRHR include the National Population Strategy, the Poverty Reduction Strategy, Youth Development policy, HIV/AIDS policy, the National Education Policy, and the Gender Equity policy. More details of these are given in Annex 2.

Table 2: Policy framework related to health and SRHR[8]	
National Health Policy (NHP) (2004 – 2015)	The policy proposed a Primary Health Care focus, with attention to community participation and education in health (individual, family and community), giving priority to basic health and nutrition but with little focus on sexual and reproductive health apart from the priority given to reduction of maternal and infant mortality. Elements of the NHP which are relevant to SRHR include a focus on gender equity and a life-cycle approach to health. The policy refers to the need to implement a National SRH Strategy in the short and medium terms.
National Health Policy 2008	Following the elections of 2006, the new Government carried out a revision and up-date of the national health policy. The new policy aims to reorient the sector, using a rights-based approach based on the principles of free services, solidarity, universal access, social justice and social participation. It proposes a new service delivery model focusing on preventive health, based in the family

[7] The 2008 strategy in fact was an edited version of the 2006 strategy.
[8] Adapted from MINSA, 2008. 'Estrategia Nacional de salud sexual y reproductiva'

Table 2: Policy framework related to health and SRHR[8]	
	and the community (see below). Discussion of sexual and reproductive health is mentioned at the start of the document but no specific SRHR proposals are included in the policy.
Conceptual framework for the Family and Community Health Model 2008	The Family and Community health model is the key element of the new sector policy. The new model aims at a more equitable distribution of health resources to focus on the needs of the poor and socially excluded groups. The model proposes a multisectoral and interdisciplinary life cycle approach to sexual and reproductive health. The Family and Community Health framework is now being used by MINSA in its decentralised structures and health facilities.
National sexual and reproductive health strategy, 2008	The sexual and reproductive health policy has 9 major objectives covering the key areas of sexual and reproductive health and rights (see below). The strategy identifies key target groups and areas of work, placing sexual and reproductive health and rights within the framework of the family and community health model. The 9 objectives are focused on: • Integrated attention to adolescent health • Sexuality education • Promotion of safe contraceptives • Improvement of maternal, perinatal and neonatal health • Reduction in STIs and HIV/AIDS • Reduction in gender-based violence • Reduction in mortality due to cancer of the reproductive organs • Treatment of infertility • Post-reproductive health programmes for men and women in the post-reproductive stage of the life cycle The policy also addresses the need to improve reproductive health commodity security.

2.2. Overview of Netherlands support for the health sector

The Netherlands is one of the most important donors in the health sector in Nicaragua, reflected in the current role of the Embassy of the Kingdom of the Netherlands (EKN) in leading donor coordination for SRHR. Netherlands support has been channelled through health sector support, in the form of pooled funding for health (Fondo Nicaragüense para la Salud - FONSALUD), and support to multi-lateral organizations and NGOs. Table 3 below summarises the Netherlands expenditure on health and SRHR between 2005 and 2008.

Table 3: Netherlands Expenditure on health and SRHR between 2005-2008 (in USD 1.000)	
Activity	**Amount**
Bilateral sector support for the implementation of the 5-year plan (2005-2009) of the Ministry	10.175
Financial support to UNFPA (support to commodity security in the Atlantic Coast)	5.415
Financial support to UNICEF (project and overall country programme support)	3.559
Direct project support in area of prevention of cervical cancer, implemented by MINSA and Ixchen (an NGO)	2.402
NGO-fund for SRHR to continue the dialogue among the NGOs, between NGOs and government	750
Other NGO-projects, including the PSI/PASMO *social marketing* of condoms	2.708
Others	426
Total	**25.435**

Source: Information system MFA, adapted by IOB (2009)

The EKN develops priorities for SRHR funding within the context of its multi-annual strategic plans (MASPs). Most of the study period of 2004-2009 falls within the period covered by the 2005-2008 MASP, whose health component focussed on a strategy of support for achievement of the SRHR Millennium Development Goals (MDGs) together with support for lobbying and service provision to increase access to SRHR services. It was envisaged that support would be channelled through the public sector, multilateral organizations and NGOs. The 2008-2012 MASP which covers the latter part of the study period aims to contribute to poverty reduction through sustainable development in an inclusive and equitable society. There is more emphasis on support for rights and gender equality, women's participation and improving access to quality health services, focussing on SRHR, and HIV/AIDS and sexually transmitted infections (STIs).
During the period to be covered by the impact study (2004-2009) the Netherlands have provided sector support for health, programme support for UNFPA and UNICEF, and project support for several non-government organizations (NGOs) in the area of SRHR. As sector support has been explored in previous evaluative work, IOB's terms of reference for the impact study indicated that the work should focus on Dutch support for UNFPA and NGOs.

The principal SRHR programmes in these categories supported in the study period were:

- UNFPA: RH Commodity security in the Atlantic Coast (RAAN, RAAS and Río San Juan)
- Ixchen: Prevention of cervical cancer, carried out in partnership with MINSA
- PSI/PASMO: Social marketing of reproductive health commodities and behaviour change
- Fundación Xochiquetzal: Alternative care for people living with HIV/AIDS
- Asociación Quincho Barrilete: Integrated care for children and adults at high risk

More details of these programmes are given in the discussion and tables below. Support was also provided for a number of smaller projects in SRHR, and a range of projects in gender and related areas in the public and NGO sectors. Annex 3 includes a table with details of all relevant programmes supported.

In the current funding cycle (2009-2012), the 4 principal NGO partners have joined in a consortium to work together on a multi-faceted programme to improve the sexual and reproductive health of vulnerable population groups. As the consortium programme was not started until the end of 2009 it has not been included in the design of the impact study.

The following Table 4 summarises key features of the 5 programmes.

Table 4: Overview of selected SRHR projects receiving EKN support (2004-2009)						
Organisation	**UNFPA**	**Ixchen**	**PSI/PASMO**	**PSI/PASMO**	**Quincho Barrilete**	**Fundacion Xochiquetzal**
Name project / programme	Reproductive Health Commodity Security in rural areas	Prevention of cervical cancer programme	HIV Prevention Behaviour Change Communication and Condom Social Marketing	Expanding and Sustaining HIV Prevention and Reproductive Health Social Marketing	Integrated care for children and adolescents at high risk	Prevention and integrated care of people with STIs and living with HIV/AIDS
Implementation period	2007-2009	2005-2008	2003-2004	2005-2009	2005-2008	2005-2008
Financial support (in USD)	5 million	2.4 million	659,000	2 million	680,000	486,000
Main features	Critical component of UNFPA's efforts to contribute to IPCD and MDG5. Focus on poorest, most isolated regions	Prevention of cervical cancer addressing major health problem with human rights based approach	BCC and social marketing with high risk groups	Behaviour change communication and condom social marketing activities; and expansion of its programme to include hormonal contracep-tive social marketing	Improve attention and care for children and adolescents at high risk or victims of sexual exploitation	Focus on access to services and prevention
Target population	Whole population, main target groups: women and men of reproductive age	Women aged 15 and older	Key affected populations (MSM, sex workers, others)	Whole population	Children and adolescents	PLWHA
Conclusion	Eligible candidate for impact study (for argumentation see section 3)	Eligible candidate for impact study (for argumentation see section 3)	Only partially within the impact study time period: relatively small project. Not an eligible candidate for study on its own, but potential candidate in combination with the follow-up project (2005-2009)	Eligible candidate for impact study (for argumentation see section 3)	Because of relatively small contribution of EKN not eligible for impact study	Because of relative small contribution of EKN not eligible candidate for impact study

3. Selection of an intervention for the impact study

The 5 major programmes supported by the Netherlands during the study period which have potential for inclusion in the impact study were reviewed on the basis of a set of criteria related to their relevance to Nicaragua and to the Netherlands cooperation policy in SRHR, and the feasibility of carrying out a rigorous impact study. As the programmes worked in complementary but diverse areas of SRHR work and did not include joint strategies, it was considered that the most feasible approach for the impact evaluation would be selection of one single programme for detailed study.

Of the 5 candidates for detailed study, two (the projects of Fundación Xochiquetzal, and Asociación Quincho Barrilete) were not considered suitable due to their limited population coverage and the relatively small proportion of EKN funding which they received. The remaining 3 programmes (UNFPA commodity security, Ixchen/MINSA cervical cancer screening and treatment, and PASMO social marketing) were reviewed against the selection criteria, as shown in Tables 5 and 6 below.

Table 5: Assessment of the selected interventions - relevance considerations					
Organisation & intervention	**Relevance to Nicaragua**	**Relevance to the Netherlands (SRHR policy)**	**Potential lessons learned from the evaluation (in-country)**	**Potential lessons learned from the evaluation (internationally)**	**Potential lessons learned from the evaluation (the organization)**
Ixchen: Prevention of Cervical Cancer Programme	Cervical cancer is a high priority in Nicaragua and is included as a priority area in the new SRHR strategy. Mortality from cervical cancer is high. Screening and follow-up treatment is carried out by the public sector and NGO and private sector partners who work together in the National Alliance for the Prevention of Cervical cancer. MINSA's contribution to the programme was to be financed through the sector support (FONSALUD). A mapping of other cervical cancer screening projects is given in Annex 4.	There has been little support to CC prevention programmes by the Netherlands, although prevention of sexually transmitted infections (which includes CC) is one of the focus areas of the Netherlands foreign support. The Ixchen Programme is strongly rooted in a rights based approach to SRH and addresses a wide range of SRHR issues including sexual health.	Evaluating the 'Ixchen model' can provide lessons on how to reach populations in remote areas, the determinants of screening and treatment behaviour, and how to provide an integrated/human rights based approach to SRHR interventions. The intervention is designed to increase linkages with (and strengthen) the public sector. Strengthening public-private partnerships in health is an important area of work, in particular methods to link interventions and improve joint actions. The clear focus of the intervention offers the opportunity of this study to add to the growing international evidence base on rigorous evaluations of cervical cancer screening and on	The international evidence base on effects of cervical cancer screening programmes, and on a rights-based approach to sexual and reproductive health interventions is not extensive. There is therefore potential for identifying new lessons learnt which may be of interest internationally.	Ixchen has been active in women's health since the late 1980s. To date no specific studies have been conducted to ascertain the impact of their overall approach, or the innovative model to address CC. The organisation has shown interest in participation in the study and is keen to be involved. The staff is committed to improving the quality of their work and applying lessons learned in future activities.

Table 5: Assessment of the selected interventions - relevance considerations					
Organisation & intervention	**Relevance to Nicaragua**	**Relevance to the Netherlands (SRHR policy)**	**Potential lessons learned from the evaluation (in-country)**	**Potential lessons learned from the evaluation (internationally)**	**Potential lessons learned from the evaluation (the organization)**
			the effectiveness of a rights-based approach to sexual and reproductive health interventions.		
UNFPA: RH commodity security in rural areas (RAAN, RAAS, Rio San Juan)	The UNFPA Programme is focused on regions with poor sexual and reproductive health indicators, variable institutional capacities, and low levels of resources to cover basic needs or address institutional challenges. The Programme is part of a wider commodity security strategy at national level, in which other donors also participate. Commodity security is essential to achieve many of the current SRHR goals.	Commodity security in SRH is included implicitly in the Netherlands SRHR policy as it is a basic building block for programmes in maternal/perinatal health, family planning, and prevention of STIs, including HIV/AIDS. UNFPA is one of the major recipients of the Netherlands support in SRH (at national and international/HQ levels) and Commodity Security is an important current area of support.	Studying the intervention provides an opportunity to analyse an important multi-dimensional process within the health sector which affects all aspects of service delivery.	Although there have been evaluations of interventions to strengthen commodity security, the team has not identified any rigorous impact studies which have clearly linked commodity supply with health outcomes. Lessons learnt from UNFPA's work in RHCS in Nicaragua have been identified in a recent study commissioned by UNFPA HQ.	UNFPA has shown interest in the study. The intervention has been evaluated recently (draft report October 2010). This specific intervention supported by EKN in the Atlantic Coast region is part of the UNFPA Global Programme for RHCS which is working at national level and which is also co-funded by EKN. It may be difficult to distinguish between the impact of this intervention and the rest of the Global Programme's work in Nicaragua.
PSI/PASMO: Expanding and Sustaining HIV Prevention and Reproductive Health Social Marketing in Nicaragua	Though the prevalence of HIV/AIDS in the country is relatively low, the Programme is relevant as it targets high risk groups, including Men having Sex with Men (MSM), Commercial Sex	The intervention is relevant to the Netherlands SRHR policy areas of prevention of STIs, and rights. Condom social marketing is also relevant for family planning (dual	There are potential lessons on how the private sector can increase access of high risk groups, and cover gaps in supply in the context of decreased donor funding for family	There have been numerous (rigorous and less rigorous) IE on social marketing, so the potential for new lessons learnt is low.	PSI and PASMO carry out many monitoring and evaluation exercises for programming and learning purposes, so the potential added value of another impact study is limited.

Table 5: Assessment of the selected interventions - relevance considerations					
Organisation & intervention	**Relevance to Nicaragua**	**Relevance to the Netherlands (SRHR policy)**	**Potential lessons learned from the evaluation (in-country)**	**Potential lessons learned from the evaluation (internationally)**	**Potential lessons learned from the evaluation (the organization)**
	Workers and their (potential) clients, and youth, aiming to change practices and decrease the risk of contracting HIV/AIDS and other sexually transmitted infections.	protection).	planning methods.		

Table 6: Assessment of the selected intervention - methodological and feasibility considerations					
	Clarity in objectives and indicators	**Strength of the causal link between the expected outcome and the intervention(s)**	**Homogeneity in intervention (across space and over time)**	**Data availability**	**Potential difficulties in data collection**
Ixchen: prevention of cervical cancer	The intervention has clear objectives, but no logical framework. Indicators will need to be constructed for the rights-based approach. Indicators have only been developed at output level.	Strong expected causal link between testing and follow-up on the one hand and treatment and mortality on the other.	High	No baseline (MINSA coverage used as baseline). Programme docs: yes. Programme records: yes DHS: yes. Census: no. Other sources: tbd	No geographical difficulties MINSA data should be available Ixchen has records of all participants so it should be possible to access the target group for additional data collection.
UNFPA: RH commodity security	Clear objectives and logical framework. Indicators at output level only.	Multiple interventions (service delivery level and institutional strengthening), with	Low (delimitation required or larger demands on statistical design)	Baseline data (and final evaluation) available. Programme docs: yes. DHS: yes.	Geographical: difficulties due to distance and poor accessibility. Beneficiaries should be

Table 6: Assessment of the selected intervention - methodological and feasibility considerations					
	Clarity in objectives and indicators	**Strength of the causal link between the expected outcome and the intervention(s)**	**Homogeneity in intervention (across space and over time)**	**Data availability**	**Potential difficulties in data collection**
	Additional indicators will have to be developed (e.g. quality related to no stock-outs)	varying degrees of direct links between intervention and impact. Causal link between support for medical supplies/equipment and health outcomes is not clear-cut as there are many intervening factors. This would affect the requirements of the quantitative IE design and cause attribution problems		Census: yes. Other sources: end of programme evaluation (to be finalized). It may be difficult to determine which health units benefitted directly from the UNFPA supplies as distribution was carried out by SILAIS.	available to participate. Commodity security is a precondition for services to function properly and be used. The net effect is therefore mainly observable at the input and output levels and less so at user level. There are many other pre-conditions to be fulfilled for improved use so attribution specifically to commodity available would be very difficult
PSI/PASMO:	Clear objectives and indicators (output and outcome level).	Strong link between the intervention and output, however less potential for finding evidence beyond output level (behaviour change and health impacts).	Low (delimitation required).	Baseline (output level). Programme docs: yes. DHS: yes. Census: yes. Other sources: studies available.	Geographical: no. It may be difficult to identify beneficiaries in high-risk groups.

Table 7: Summary assessment of the selected interventions									
	Relevance of the intervention and the impact evaluation				Feasibility of the impact evaluation				
	Relevance of intervention to Nicaragua	**Relevance of intervention t the Netherlands**	**Potential lessons learned (in country and internationally from the impact evaluation**	**Relevance of the impact evaluation to the organization, and the organization's interest in the study**	**Clarity in objectives and indicators**	**Strength of causal link between intervention and expected outcome**	**Homogeneity of the intervention**	**Data availability**	**Relative easiness of data collection**
Ixchen: PCC	+++	+++	+++	+++	++	+++	+++	+++	+++
UNFPA: RHCS	+++	+++	++	++	++	+	+	++	+
PSI/PASMO	+++	++	+	+	++	+	+	+++	++

Grading: +++ (high); ++ (medium); + (low)

Table 7 shows a grading (high/medium/low) of the 3 interventions against the selection criteria. The UNFPA and Ixchen interventions both show positive scores in most of the relevance criteria, with PASMO falling behind in terms of potential for lessons learnt. This is partly due to the extensive evaluation already carried out and reported for the social marketing programme by PSI and PASMO. Grading on the feasibility criteria shows a clear preference for the Ixchen/MINSA programme for prevention of cervical cancer in terms of clarity and strength of causal relationships between intervention outputs and outcomes, homogeneity in intervention (in terms of implementation across communities/regions), and data availability and opportunities for additional data collection. The scores show that there will be important difficulties in measurement of the impact of the UNFPA project due to (a) lack of clear and unambiguous causal links between actions (supplies and systems strengthening to improve commodity security) and health outcomes, which will lead to problems in attribution of impacts to the intervention, and (b) the lack of homogeneity in intervention outputs (at health services level) which complicates study design, bearing in mind the budget constraints. Measurement of the impact of Netherlands support could also be difficult as UNFPA commodity security work is supported by a number of donors at national level. Data collection would also be difficult as the project worked in remote areas. The UNFPA programme may have wider relevance both in-country and internationally, in that it is more representative of Netherlands support for SRHR programmes and addresses an important area of work in SRHR. However the difficulties in measuring and attributing any impacts to support for commodities through the programme are substantial.

On the basis of the scores as well as discussions with national stakeholders, including MINSA and the project implementing agencies, the IOB representative, EKN and the development partners, the Ixchen/MINSA cervical cancer screening and treatment programme has been selected as the focus of the impact study. As discussed below, in addition to measurement of the impact of the programme, the study should provide a series of important insights into processes and determinants of impact which will support design of future interventions in the field.

4. Description of the selected intervention

Introduction on the intervention selected

The "Sectoral programme for the prevention and treatment of cervical cancer" was developed by the Nicaraguan Alliance for the Prevention of Cervical Cancer, a network which was developed in 2003 and includes the Ministry of Health, other government institutions and civil society organisations (CSOs). The intervention was part of the Alliance's response to combat the high rate of cervical cancer in Nicaragua through activities in the public sector (MINSA) and civil society. Netherlands support includes basket funding through FONSALUD for the component carried out by MINSA, and direct funding for activities carried out by Ixchen. The Ixchen programme which will be studied during the impact evaluation was completed in 2008. A second phase is currently underway, Ixchen working in consortium with 3 other NGOs financed by the Netherlands (PASMO, Fundación Xochiquetzal and Asociación Quincho Barrilete).

How the programme was developed

The intervention was designed to increase the access of low income women in rural areas to detection and treatment of cervical cancer and other gynaecological services through development of mobile services which provide coverage in areas where MINSA services are not available or inaccessible for reasons of (perceived) quality, geographical distance or other. Many of the women in the target groups rarely use sexual and reproductive health services, particularly those not directly related to delivery and maternal-child health, due to problems on both the demand side (awareness, attitudes) and on the supply side (lack of accessible or quality services, etc). The mobile teams' work included a service provision element and an educational element, this latter aimed at increasing women's knowledge and awareness of the need to care for their sexual and reproductive health. The programme worked from a rights-based focus, with an emphasis on ensuring (through education and out-reach work) that women were aware of their right to sexual and reproductive health services, and of their right to demand good human and technical quality of those services.

The teams were set up by Ixchen and worked in coordination with MINSA. The teams worked both in areas where MINSA has no current services, as well as some areas where MINSA does have static facilities, but was unable to provide good quality cervical cancer screening. In areas where MINSA has no coverage MINSA staff travelled with the mobile teams, and worked with Ixchen staff to provide a wider range of services. The MINSA staff in the mobile units provided maternal and child health care (ante-natal care, post-natal care, infant health care, growth monitoring), whilst the Ixchen staff in the mobile units provided gynaecological consultations, detection and syndromic management of STIs, and Papanicolaou (Pap) smears for detection of cervical cancer. MINSA and Ixchen staff as well as community education agents received training in service promotion and provision. MINSA also provided cervical cancer screening (Pap smear) services in areas where it had static health facilities. Results of the Pap smears taken during the mobile unit visits were returned to women in later visits of the mobile units, which continued to visit each municipality for several weeks until service coverage targets had been met. The teams then moved on to other municipalities. Training of MINSA staff and community agents meant the project left strengthened

community networks and public health facilities with better capacity to carry out future screening and referral programmes.

All women with positive results from Pap smears were referred to early treatment clinics in the principal towns of the areas covered by the intervention. These treatment clinics were set up in existing health centres run by Ixchen and Profamilia, the International Planned Parenthood (IPPF) affiliate in Nicaragua. Women with advanced lesions which could not be treated in these clinics were subsequently referred to the national MINSA hospitals for surgical or advanced cancer treatment.

Objectives

The overall aim of the intervention was:

- To contribute to improve SRH of women aged 20-64 through a strategic sector alliance for detection and early treatment of cervical cancer and sexually transmitted infections (STI), working within a framework of integrated attention to women[9].

The general objective was:

- To increase the survival rate of adult and older women through early detection and treatment of cervical cancer and STIs in 75 municipalities.

Specific objectives were:

- To improve the knowledge and attitudes of women and men and promote a culture of prevention of STIs and cervical cancer
- To progressively increase the coverage of cervical cytology (Pap smear) among women aged 20 to 64
- To guarantee opportune diagnosis and treatment of early stage lesions and STIs detected amongst women who used the services
- To guarantee palliative treatment for women diagnosed with invasive cancer
- To strengthen institutional capacities of MINSA and CSO to work within a sector approach for prevention of cervical cancer, through development of a demonstration project of integrated attention for women.

Target groups

Target groups of the Ixchen intervention were low income women. Although work was focused on rural areas in 75 municipalities where MINSA had no coverage for cervical cancer screening and limited capacity for detection and treatment of STIs, the programme also worked in urban centres where services were requested by MINSA or the local authorities for specific under-served groups (free zone factories, prisoners, etc). The principal target group was low income women, but in practice the intervention offered to all women who arrived at the mobile units seeking health services. Services were also provided to women outside the 20-64 age group (see footnote).

Magnitude/scope

Ixchen received Dutch funding of US$2.4m for the work during the period 2005-2008. The programme was originally planned at a larger scale but additional funders did not come forward. The proposed coverage, number of mobile units, range of services offered and number of programmed visits were therefore scaled down.

[9] That is, in practice all women aged 15 or more were accepted for cervical cancer screening

Implementation was carried out in 75 municipalities, providing services for 88,769 women of whom 66,521 had Pap smears. Women not having smears included those with menstruation, those who had been screened elsewhere recently, and those with personal reasons for not wanting or being able to do the test. The programme identified medical conditions which required follow-up treatment in 4,611 cases, including endocervicitis, inflammatory conditions, polyps, human papiloma virus (associated with cervical cancer), pre-cancerous lesions of different grades (early, mid and late), and more advanced stages of cervical cancer.

All users were informed of the results of the screening, and all were referred to the early treatment clinics for attention, although in equivalent static programmes many would have only been monitored through repeat screening. This generous treatment protocol was implemented due to the difficulty of carrying out monitoring and on-going regular screening among the target groups, particularly those in remote areas without access to regular services. The total number of women treated in the early treatment clinics (4,611 women) includes 1,794 women who were referred to the clinics from MINSA static units. Of the total 4,611 who were treated in the clinics, follow-up biopsies confirmed lesions in 2,667 cases. 1,292 of the women who attended the early treatment clinics were cured. The status of the others at the end of 2008 is shown in Table 8. Despite extensive follow-up and contact with women who had positive results, and the removal of barriers to access such as transport and cost (all treatment was free and transport was provided), a large number of women failed to start or dropped out of the treatment programme. Additional follow-up was planned to try and reduce this number. The impact of drop-outs on the net effects of the programme will depend on a number of factors including the type of condition or lesion identified (about 70% of low-grade dysplasia regresses spontaneously or does not progress), and at what stage in the treatment process drop-out occurred. These points are discussed further in the methodology (section 6). The programme also carried out syndromic management of STIs, but medicines for treatment were not available and the number of users with STIs is not included in the table below.

Table 8: Status of programme users with positive Pap smear results - 2008

Status	Number
Early lesions; still in the programme for monitoring	953
Failed to start or dropped out of treatment programme	1891
Transferred	466
Died	1
No data	8
Discharged (cured)	1292
Total	**4611**

Source: Ixchen

Implementation method, modus operandi including the role of partner organisations and the community

Initial coordination was carried out by Ixchen with the central MINSA offices and the “Sistemas Locales de Atención Integral en Salud (SILAIS)”, the decentralised regional administrative MINSA authorities, who facilitated coordination with the health units at municipal level. Ixchen set up 6 mobile teams of medical and educational staff, and developed a programme of visits to the communities in the municipalities included in the intervention. MINSA health facilities in the

programme areas worked in coordination with local government to activate the community networks of health workers and community agents in their areas, who informed women about the services provided in mobile units, and promoted use of the services. The Ixchen mobile teams were complemented by MINSA staff when they travelled to remote areas where there was no existing MINSA coverage through static facilities. In the absence of the mobile services women would have had to travel to the nearest MINSA facility for services, which is a major obstacle to service use when distances are long and travel is costly; women often give their own sexual and reproductive health low priority when there are significant access problems. In the mobile units, MINSA staff provided maternal-child health services, whilst Ixchen focused on SRH including gynaecological consultations, detection and syndromic management of STIs and Pap smears. Women who arrived at the mobile clinics were informed of the services available and encouraged to have a Pap smear. All services were provided free of charge.

Results of the Pap smears were returned to service users within a month, and those who needed attention were referred to the early treatment clinics set up by the programme in Ixchen and Profamilia facilities in the nearest towns. All of these women had a follow-up biopsy in the early treatment clinics. Those with conditions which could be treated in the clinics continued to use those facilities, whilst those with advanced conditions were referred directly to MINSA services in the reference hospitals. Ixchen made a great deal of effort to ensure that women received their results and encouraged them to use the treatment when necessary. Treatment followed the national protocols, but was biased in favour of over-treatment in some instances as discussed earlier, taking into account the low level of users' contact with the health system, their socio-economic characteristics, health and nutritional status which may accelerate the progression of pre-cancerous lesions, and the difficulties they may have had in carrying out future screening and using follow-up services on a regular basis. For example, early pre-cancerous lesions (low grade dysplasias) were referred for colposcopy[10] even though the condition often disappears naturally, as future monitoring of these cases could not be assured. This may affect the cost-effectiveness of the intervention, and methods will be developed to ensure any cost-effectiveness analysis takes this into account. Advanced cancers which could not be treated in the early treatment clinics were referred to appropriate MINSA facilities under an agreement between the implementing partners.

The programme worked with existing networks of community health agents organised by MINSA, with local government and with other local and community-based organisations that participated in educational work and encouraged women to go to the mobile units for attention. Transport was provided (often with support from local government, churches and community organisations) for women with positive results who needed treatment outside their community.

In addition to joint MCH-SRH work in the mobile units, partnership work with MINSA included cooperation in reception and processing of Pap smears which MINSA had insufficient capacity to process, and attention in early treatment clinics for women referred from MINSA facilities.

[10] A procedure in which a gynecologist uses a lighted magnifying instrument which is called a colposcope to examine the tissues of the vagina and the cervix

Description of problems encountered, obstacles, achievements and expected and unexpected results

There were some key problems during the implementation which affected impact, such as the difficulty in convincing women with positive Pap results to use the treatment services. Reasons for this and its effect on outcomes will be researched during the impact study. There were also difficulties in provision of medicines for syndromic treatment of STIs due to lack of supplies. The effect of this on women's overall SRH can also be researched. Funding restrictions meant that the mobile units could only carry out one round of visits to the municipalities, visiting each municipality the number of times necessary during that round to reach the targets, as explained earlier. Follow-up screening in later years has therefore been dependent on users' access to MINSA services. The effect of these three problems on impacts will be researched during the study. Solutions to some of the problems encountered in the study period are already being implemented in the second (current) phase through changes in the programme design. Other problems which arose during implementation, including the lack of availability of medicines for treatment of STIs, may also have had an effect on overall impact but are not suitable for inclusion in the study for methodological reasons.

5. Scope of the impact study

Principal focus

The impact study will focus on the cervical cancer detection and treatment programme carried out by Ixchen in partnership with MINSA, and will include both expected and unexpected outcomes. It will research overall impact of the programme together with the effectiveness of implementation processes.

The study has been designed to identify areas of impact which can be identified quantitatively and qualitatively, and to research the reasons behind these, including reasons for not achieving the expected results. It will also identify the reasons behind unexpected outcomes. The study will be relevant for in-country priorities as well as for the Netherlands cooperation strategies, as it aims to provide insights to support the remaining implementation of the follow-up programme which started in 2009, as well as identifying lessons learnt for outreach programmes and public-private partnerships which may be useful for a wider audience in Nicaragua and elsewhere (see section 3). In particular, it is hoped that the study will be able to explain why women do not take up or complete the treatment programmes. Understanding the reasons behind this and identifying ways to improve take-up could lead to significant increases in the potential impact of this type of programme in terms of number of lives saved.

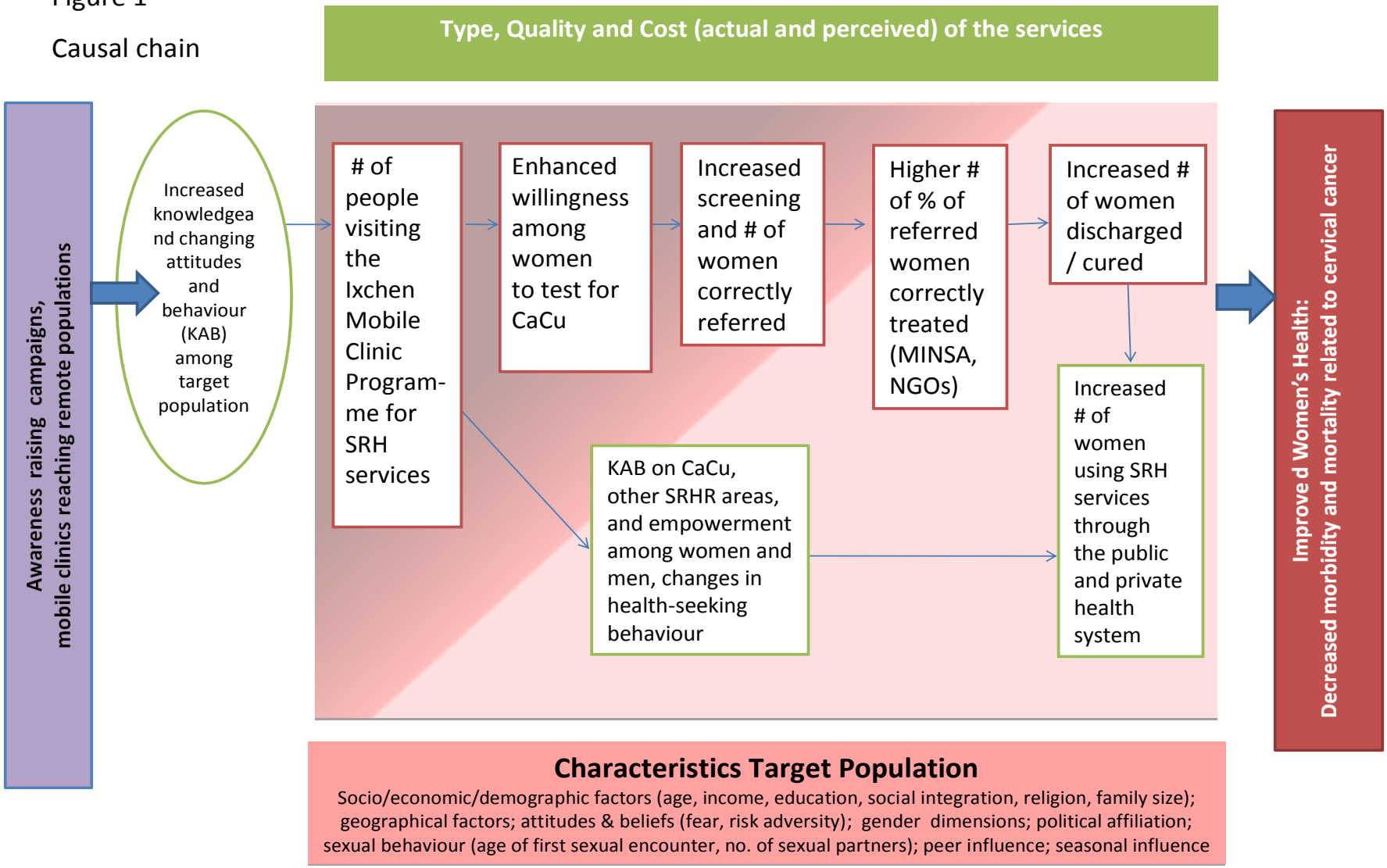
Intervention logic and causality chain

Figure 1 shows the intervention logic and causal chain of the 2005-2008 programme. The key steps were:

- Supply-side activities in setting up the mobile units and early treatment clinics, training Ixchen and MINSA staff and community workers, and development of the programme of visits for the mobile units. These activities were key determinants of the service availability and quality offered by the programme. This was followed by:
- Awareness-raising activities in the community, carried out by programme-trained community health workers and community agents who informed women about the services and encouraged them to attend. Educational work has a rights focus emphasising women's right to sexual and reproductive health and to a range of services beyond those directly related to motherhood. These activities led to changes in knowledge, attitudes and behaviour, and then to:
- Women visiting the mobile clinics, where they were encouraged to use a range of sexual and reproductive health services including Pap smears. This led to:
- Increased numbers in the screening programme, which covered a large number of women who had not previously carried out cervical cancer screening, as well as those who had tested before (mainly in the public sector programmes) but were due for follow-up tests. Results were returned to users within a month, and all positive conditions were referred to treatment in the early treatment clinics for early lesions or in MINSA reference hospital facilities if lesions were advanced. This led to:

Figure 1 –

Causal chain



- Increased numbers receiving correct treatment. Records were kept of all clinic attendance for different stages of treatment. Although a significant number of women refused to start treatment or dropped out before treatment was completed (see previous discussion), there was an important increase in the number who did complete treatment, leading to:
- Increased numbers cured and discharged from the system. This will lead to:
- Decreased morbidity and mortality from cervical cancer

Expected changes from the programme activities which will be included in the impact study

This causal chain is expected to lead to an end result of lower morbidity and mortality from cervical cancer, but changes in these two indicators due to the programme cannot be identified at this stage due to the long time period for development of the disease (8-20 years, with few symptoms at early stages). Intermediate outcomes including Pap smear coverage and take-up of treatment among different target groups will therefore be used, as discussed in the methodology section below. It is also expected that the awareness-raising work together with the screening and treatment programme will lead to more women returning to MINSA for routine re-screening.

Factors which are likely to affect some or all of the elements and links in the causal chain and may have affected women's progression through the programme are shown in the diagram. They include socio-economic and demographic factors, geographical factors, attitudes and beliefs, gender dimensions, political affiliation, sexual behaviour, peer attitudes and seasonal factors. The importance of these different factors for participation in the programme and for take-up and completion of treatment will be researched during the impact study.

Figure 1 also shows a second causal chain in which awareness-raising activities and clinic visits lead to more knowledge of SRHR and improved health-seeking behaviour, particularly in the area of SRH. This second causal chain is expected to have important additional effects on SRH and will be included in the impact study. Indicators for this part of the work will be related to increased use of sexual and reproductive health services and overall SRH status, as well as the number of women carrying out routine re-screening for cervical cancer through the MINSA system. The factors mentioned above which may affect women's participation in the cancer screening programme are also likely to affect their take-up of other sexual and reproductive health services. This will also be researched in the impact study.

Supply-side factors which affect outcomes include the type of service provided, service quality and perceived cost (although all services were free users may have perceived non-financial and opportunity costs related to time taken in using the services). The rights-based approach of awareness-raising and educational work is also an important supply-side factor which may have affected women's use of the cancer detection and treatment and other sexual and reproductive health services.

The impact study will cover all the stages and linkages in the causal chain, except the final link to reduced mortality, due to the time-lag of 8-20 years mentioned earlier. The study will identify both the expected and unexpected changes resulting from the intervention and its *modus operandi*, and the variables which may have influenced these changes and intervention outcomes. These factors will be researched in the quantitative and qualitative work as appropriate.

6. Proposal for methodological design

6.1. Methodological options for assessing the effects of the intervention and related questions of interest

Rigorous evaluation of the effects of an intervention requires careful analysis of the extent to which changes in variables of interest can be attributed to an intervention, controlling for other known (and unknown) explanatory factors. Rigorous evaluation ideally should rely on a mixed method design, where both quantitative and qualitative methods reinforce each other in establishing causal linkages between intervention outputs and effects (Leeuw and Vaessen, 2009). Moreover, both qualitative and quantitative methods complement each other in the analysis of how, why and for whom certain effects have occurred.

In the realm of quantitative methods broadly two strands of methodological approaches can be discerned which allow for an estimation of the *net* effects of an intervention, controlling for other influences. First of all, experimental and quasi-experimental approaches rely on frontloading complexity.[11] For example the principle of randomized assignment of an intervention to participant and control groups (if correctly applied and in case of sufficiently large samples) will generate equivalent groups. Comparison over time will allow for a fairly straightforward estimation of net effects. Similarly, when randomisation is not feasible a number of quasi-experimental approaches[12] can be used to generate equivalent groups for attribution analysis.

Alternatively, regression-based approaches with statistical controls are especially useful in case of non-experimental settings, when intervention exposure along with other explanatory factors is modelled to generate insights into net effects. Whereas regression-based approaches may be considered as second-best from an attribution point of view they offer advantages in terms of covering larger populations, making use of existing data sets and supporting explanatory analysis on changes of interest, which in part may be attributable to an intervention.

The intervention logic (see Figure 1) provides the basis structure for determining the priorities for the impact study as well as guidance for the methodological design. Research questions for the impact study will be investigated within the overall framework of analysis of the relevance, efficiency and effectiveness of the intervention. The questions for quantitative and qualitative field research have been developed to focus mainly on questions of outcomes and processes. Specific research questions have been developed on the basis of analysis of the causal chain, the problems encountered during the intervention, and the relevance of the research for both in-country use and to inform Netherlands development cooperation. Questions related to processes have been included in order to provide a more complete analysis of relevance and efficiency (for example, questions on public-private partnerships as well as the broader importance of the rights-focused approach chosen to advance women's SRHR). The feasibility of including different research topics given methodological issues, time and financial resource constraints for the impact study, and the political and social sensitivity of some areas of work has also been taken into account.

The proposed research questions are:

[11] In short, this means that heterogeneity in the explaining factors of a certain change process and indicator are controlled for by design, i.e. through random assignment of the intervention.

[12] For example, pipeline matching or regression discontinuity.

1. What is the effect of the intervention in terms of coverage (number of people screened for cervical cancer) compared to the without-intervention situation?
2. What are the main factors that explain the coverage of the intervention?
3. What is the effect of the intervention in terms of awareness and attitudes to cervical cancer and other SRH issues?
4. What is the effect of the intervention on the target group's use of other SRH services in the public, private and NGO sectors?
5. What is the effect of the intervention in terms of number of people correctly treated (discharged) for cervical cancer compared to the without-intervention situation?
6. What are the main factors that explain (start and continuation of) treatment and drop-out ratios?
7. What are important unexpected effects of the intervention?
8. How effective has the intervention been in terms of formation and sustenance of public-private partnership?
9. How cost-effective has the intervention been in terms of cost per screening and cost per case detected?

Below we discuss methodological design aspects for each of the questions stated above. Questions 1 and 5 will be addressed through a counterfactual study design.

1. What is the effect of the intervention in terms of coverage (number of people screened for cervical cancer) compared to the without-intervention situation?

This question will be addressed using counterfactual analysis. The situation of what happened with the intervention will be compared with the situation of what would have happened without the intervention. Given the very specific outreach of Ixchen among underprivileged groups in non-randomly chosen communities it is rather cumbersome and expensive to develop a participant-control group counterfactual comparison. Instead, several factors plead for using a more simple yet reliable counterfactual approach based on before and after comparison of screening rates:

- The causality between intervention output and outcome is straightforward and very strong.
- Given Ixchen's focus on underprivileged areas, in most of these areas the without-intervention situation shows low uptake of cervical cancer screening among the target population (i.e. few people that have been screened without the intervention). Consequently, common sense and direct observation support the fact that the presence of an intervention on awareness raising and cervical cancer screening (in the Ixchen target areas) is the strongest explanatory factor of increases in the number of people screened and treated for cervical cancer. (That is, in the absence of other interventions that could explain the change in health seeking behaviour.)
- Client records provide information on cervical cancer screening in the past. In addition, a representative survey among beneficiaries can be used to verify client screening history in more detail.
- MINSA data on the number of Pap smears in static MINSA facilities at the level of municipality show a stable annual coverage during the intervention period; this supports the notion that no other interventions have influenced women to seek cervical cancer screening.

With the above information we can establish a credible without-intervention estimate and subsequent estimate of the net effect of Ixchen in terms of number of women being screened for cervical cancer.

2. *What are the main factors that explain the coverage of the intervention?*

Question 2 is aimed at explaining coverage. Two perspectives need to be covered and combined in the analysis. First of all, it is important to look into Ixchen's methodology of information dissemination and awareness raising on SRH issues and mobile clinic visits. In addition it is important to document what is being done inside the clinics to convince women of the importance of cervical cancer screening and other services. In what ways does Ixchen's methodology of outreach and awareness raising differ from MINSA's (and other institutions) and to what extent does it affect the coverage among (particular types of) women (and their families)? To contribute to answering these questions, semi-structured interviews will be done with key informants (Ixchen and MINSA staff, community figures, NGO staff and others).
This perspective needs to be complemented with an analysis of the potential beneficiary's perspective. One way to examine the nature of intervention coverage of the target population is to compare the characteristics of a random sample of women from the ENDESA dataset (women who have undergone cervical cancer screening in the regular health system) with the characteristics of a random sample of Ixchen beneficiaries. Despite the particular geographical coverage of Ixchen in underprivileged areas, several variables from ENDESA may be helpful to allow for a meaningful comparison.[13] Consequently, we will be able to derive important insights on the added value of Ixchen in terms of reaching particular groups of women beyond the reach of the conventional system. Perhaps more importantly, a survey among a representative sample of Ixchen beneficiaries can be used to record information on important variables that may affect choice behaviour on whether or not to visit a mobile clinic. Additional qualitative research in terms of semi-structured interviews with women who did and women who did not visit the mobile clinics (as well as their family members) is important to shed more light on this issue. In all, we want to determine which variables from the perspective of the intervention (e.g. the information dissemination campaign about visits of mobile clinics) and the potential clients' perspective (demographic, socio-economic[14], cultural, religious, other attitudes and beliefs) explain the coverage and results of outreach.

3. *What is the effect of the intervention in terms of awareness and attitudes to cervical cancer and other SRH issues?*

This research question is important in the light of the explicit aim of the Ixchen/MINSA intervention to change beneficiaries' awareness, attitude and use of SRH services (see intervention logic in Figure 1). One of the issues that will be addressed is women's apparent readiness to seek repeat cervical cancer screening at intervals of several years.

[13] For a short listing see Annex 6. The idea is that we compare a representative sample from the ENDESA data of women from similar areas (reconstructed) as the Ixchen intervention regions with a representative sample of Ixchen beneficiaries.
[14] This aspect is important with respect to the actual and perceived costs of participation. Whereas screening and treatment are free of charge, there are still costs in terms of opportunity costs of time and some transport.

By administering a questionnaire to a sample of Ixchen beneficiaries and a sample of non-beneficiaries and after controlling for pressing selection bias[15] problems, the net changes in the variables of interest can be inferred in a relatively precise manner. However, this methodological option is subject to a number of threats to validity (e.g. response effects[16] among Ixchen beneficiaries versus non-beneficiaries; the fact that it is very expensive and cumbersome to find suitable control areas/control groups). Consequently, we opt for a more simple descriptive approach. The changes in awareness and attitudes towards cervical cancer and SRH issues can be established from two different angles. The first angle concerns a survey with a questionnaire administered to a random sample of Ixchen beneficiaries (cross section with recall). Second, qualitative case studies including interviews with Ixchen beneficiaries, their partners, family and friends can help to elucidate these dimensions (especially awareness and attitudes). Given that this scenario is not subject to counterfactual analysis by design, it is important to make an inventory of other events and factors which may have affected awareness, attitudes and use of SRH services over time.[17]

4 What is the effect of the intervention on the target group's use of other SRH services in the public, private and NGO sectors?

Question 4 is addressed in the same manner as question 3.

5. What is the effect of the intervention in terms of number of people correctly treated (discharged) for cervical cancer compared to the without-intervention situation?

The estimation of the effect of the intervention in terms of the number of women correctly treated as compared to the without-programme scenario will further build on the estimate of the net effect in terms of extra people screened for cervical cancer as discussed above. The analysis will be grounded in a systematic scrutiny of the treatment and referral chain (see previous sections). By calculating percentages of clients with positive diagnosis of cervical cancer screening subsequently receiving more detailed screening and correct treatment *and* correcting for net additional screening done by Ixchen we will be able to arrive at a credible estimate of people correctly treated (discharged). Subsequently this enables us to make inferences about the number of lives saved (morbidity and mortality).

[15] Uncontrolled differences between the two groups which may affect the outcomes of interest.

[16] This includes for example the possibility of Ixchen beneficiaries providing answers to questions that do not reflect the reality (e.g. answers they think the enumerator wants to hear) *because* they have been beneficiaries (and may have expectations about future assistance). Similarly, there might also be response effects among non-beneficiaries or subgroups of both groups.

[17] Another option for analysis is the following. The fact that Ixchen has gradually expanded its outreach over time offers some scope for comparing indicators of interest between regions recently covered by Ixchen ("new" regions) and regions covered in the beginning of the intervention period ("old regions"). It may be worthwhile exploring this option with respect to questions 3 and 4. This type of analysis (which in a way is similar to counterfactual analysis based on pipeline matching or a natural experiment), may help to shed some light on the medium-term effects in terms of changes in attitudes and behaviour regarding SRH issues. A key requirement is that we have access to detailed data on Ixchen's gradual outreach over its target areas. Ixchen has expressed a commitment to reconstruct these data by the time the empirical phase starts. Annex 5 shows data on Ixchen's outreach at department level which is insightful yet not sufficiently specific for research purposes.

6. *What are the main factors that explain (start and continuation of) treatment and drop-out ratios?*

Question 6 requires a reconstruction and assessment of the entire treatment and referral chain, from the moment of positive result during the cervical cancer screening to discharge, continued treatment or fatality. At different points in time clients may decide to continue treatment in the Ixchen system, the MINSA system or drop out. Reasons for continued treatment or dropout can be categorized into two broad groups: the nature and (actual/perceived) quality of follow-up and treatment by Ixchen and MINSA (including particular approaches, costs, staff capacities, etc.) and the characteristics of clients. In order to study the intervention characteristics that may affect referral/treatment decisions, the study envisages a number of qualitative methods of inquiry to be used. First of all, interviews will be done with medical (and other) staff at Ixchen HQ and mobile clinics, Ixchen and Profamilia treatment facilities and MINSA treatment facilities (including the national hospitals that offer advanced cervical cancer treatment). Second, using a purposive sampling method to allow for maximum variability of relevant characteristics,[18] individual women who have dropped out of the system in different phases of the treatment will be interviewed alongside their family members, using semi-structured interview templates. In addition, we will also include a module in the survey introduced in the previous paragraphs (among women who attended the mobile clinics) to cover attitudes on treatment and potential constraints for undergoing treatment.[19] It will be important to identify the stage at which people are dropping out of the treatment programme. In some cases they may complete the most important treatment stages although they drop out before being finally discharged. It is also important to note that the programme does provide a certain level of over-treatment due to the difficulty of maintaining contact with women who have very early cervical changes which often disappear over time without treatment. The programme's treatment protocol includes colposcopy and follow-up for women who would normally only have their conditions monitored. If the group of non-starters and drop-outs includes many women with this type of screening result, the overall impact of drop-out on net effects of the intervention and final health status of the target groups may be less.

7. *What are important unexpected effects of the intervention?*

With respect to this question, there is often little hard data available to identify and analyze unexpected effects. Open-ended questions in the survey and semi-structured interviews among key informants as well as women and their families at different points in the screening-treatment chain will be used to shed light on this question.

[18] After having developed initial hypotheses regarding major aspects affecting treatment/drop-out decisions (family status, income level, family size, livelihood activities, stage in the treatment chain, etc.), we will select particular women (and their families) for further in-depth inquiry.

[19] We also considered alternatives which after some consideration do not appear to offer sufficient added value in relation to the costs. First, we could draw a random sample among clients who have continued treatment as well as drop-outs. Probit/logit regression analysis (regression analysis with a binary dependent variable, e.g. yes/no undergoing treatment) could then be used to explain treatment/dropout. A second less elaborate option would be to draw a random sample among dropouts only. Both options require an additional survey (besides the survey we are proposing among the general population of women who visited the mobile clinics) which is rather costly. In all, we prefer the less precise approach of 'piggy-backing' on the original survey in combination with qualitative methods of inquiry.

8. *How effective has the intervention been in terms of formation and sustenance of public-private partnership?*

This question addresses the implementation dimension (how well did it work in practice) and institutional effects (e.g. in terms of capacity-building, learning about 'good practices', replication) of the public-private partnership involving Ixchen and MINSA, which is of great interest to local stakeholders and therefore included in the proposal. Several underlying questions can be formulated: How and why was the partnership between Ixchen and MINSA developed? What was achieved through the partnership approach? What obstacles and problems occurred, and why? How were they solved? What lessons can be learned for future partnership work? How sustainable is the model? The evaluation team will look at these questions mainly using semi-structured interviews with MINSA and Ixchen staff both at HQ and in the field, with staff from municipalities and community organizations, and with other key informants in public and private institutions and the community. Another issue that will be studied within the framework of this question is the added value of Ixchen's approach to cervical cancer screening and treatment (mobile clinic model and rights-based approach) compared to the conventional MINSA approach.

9. *How cost-effective has the intervention been in terms of cost per screening and* cost per case detected *?*

It is likely that the cost of this programme are relatively high as intervention areas are remote and the cost of physically getting the services to the users falls completely on the service providers; users are also likely to have a relatively high incidence of dysplasia as many have never been screened before; and the treatment protocol tends to over-treat as it tries to compensate for the difficulty of maintaining contact with women with early lesions.

Bearing this in mind direct cost comparisons with other programmes for cervical cancer screening and treatment in Nicaragua, such as MINSA's static clinic screening programme will probably reveal substantial differences in e.g. the direct *cost of screening per person screened*. Comparable data for approaches used by other NGO programmes are unlikely to be available for a comparison of cost-effectiveness between the approaches.

However, the cost-effectiveness analysis will try to establish the result of the programme by what has been achieved with the actual resources used in terms of e.g. *cost per detected case.* This may be compared with the results of other approaches including the regular static clinic screening by MINSA. This indicator may also be used for further comparison with information from screening programmes in other countries, such as India, South Africa and Kenya, to name a few on which relevant information is available, as well as from programmes in high income countries, such as the Netherlands. The analysis will take into account different age groups and risk factors of programme users and assumptions on progression rates from early dysplasia's to cervical cancer.

It will be assessed to what extent the cost-effectiveness study can be extended to include also higher level results and e.g. compare cost per life saved or per additional life year gained. This analysis would be more complicated as it includes also a comparison of costs and (differences in)

effectiveness of actual treatment. However, data availability may prevent such a more elaborate approach within the context of this study.

Ixchen and Profamilia cost data will be used for the cost of screening and early treatment processes, and MINSA data for the cost of cancer treatment. As the mobile units provide other services as well besides cervical cancer screening, an appropriate method of allocating fixed (incl. overhead) costs to the Pap smear programme will be developed in consultation with Ixchen and MINSA. Where specific cost data are not available it may be necessary to estimate on the basis of existing information.

Conclusions will take into account the additional benefits of the intervention to users, including access to other sexual and reproductive health services.

With respect to the above, research questions will be pooled as much as possible in the implementation of the study. This is especially true for the survey (which caters to multiple research questions) but also for qualitative research at institutional, community and target population level.

6.2. Data collection and analysis

Table 9 provides a summary of the different methods to be employed in the data collection work. It should be noted that all questions are supported by desk study. This will be indicated in the budget but not further discussed in this section.
Part of the success of the study depends on the availability of existing data within MINSA[20] and Ixchen. Regarding the latter we briefly list the main data sources:

- Individual beneficiary forms of all women who were screened for cervical cancer (a random sample should be digitized (for the survey))
- Individual client data on all women with a positive test result (digital database available with treatment trajectory)
- Map/data on Ixchen's geographical coverage over time at community level (should be digitized, Ixchen has offered to do this)
- Information on cost of services provided

Some discussion on the survey research process is in order. As can be deducted from Table 9 several questions are analyzed (in part) on the basis of a survey among Ixchen beneficiaries (women who visited the mobile clinics) and corresponding data analysis. The survey research process comprises the following aspects:

- Questionnaire design
- Logistical planning
- Consideration of ethical issues incl. informed consent form
- Sampling framework and sample size
- Training and selection of interviewers
- Pilot survey
- Implementation of survey (with quality control)
- Data entry (with quality control)
- Data analysis

[20] We currently have outreach data on cervical cancer screening at municipal level during the intervention period (hard copy). We still need to access the digital data base developed by MINSA on cervical cancer screening.

Table 9: Methods to be used for data collection		
Dimension/question	**Counterfactual analysis**	**Analysis and data sources**
1. What is the effect of the intervention in terms of coverage (number of people screened for cervical cancer) compared to the without-intervention situation?	Yes	Ixchen client data digitization (large random sample); data analysis Ixchen data, MINSA data; survey among Ixchen beneficiaries and data analysis
2. What are the main factors that explain the coverage of the intervention?	No	Survey among Ixchen beneficiaries and data analysis of survey data, Ixchen client data, ENDESA data; case studies and semi-structured interviews with Ixchen beneficiaries and non-beneficiaries and with key informants
3. What is the effect of the intervention in terms of awareness and attitudes to cervical cancer and other SRH issues?	No	Survey among Ixchen beneficiaries and data analysis; qualitative case studies including semi-structured interviews among Ixchen beneficiates and their family members
4. What is the effect of the intervention on the target group's use of other SRH services in the public, private and NGO sectors?	No	See 3
5. What is the effect of the intervention in terms of number of people correctly treated (discharged) for cervical cancer compared to the without-intervention situation?	Yes	See 1
6. What are the main factors that explain (start and continuation of) treatment and drop-out ratios?	No	Semi-structured interviews with key informants (community figures, local authorities and MINSA/Ixchen/Profamilia staff), and with beneficiaries and family members; survey and data analysis
7. What are important unexpected effects of the intervention?	No	'Piggy-backing' on key research work (survey, semi-structured interviews)
8. How effective has the intervention been in terms of formation and sustenance of public-private partnership?	No	Semi-structured interviews with key informants in public and private sector institutions, CSO and the community
9. How cost-effective has the intervention been in terms of cost per screening and cost per case detected?	No	Ixchen/Profamilia/MINSA data on costs per screening and per case detected; Ixchen data on number of people screened and treated in different phases/stages of treatment; MINSA data on dysplasia rates and on progression rates

The questionnaire will cover the following dimensions in order to serve the different purposes discussed above:

- General client and household characteristics
- Socio-economic description
- Institutional affiliation and social structure
- Knowledge of and attitudes to SRHR
- Health-seeking behaviour and rationale
- Use of static and mobile sexual and reproductive health services
- Client satisfaction incl. perception of service access, (opportunity/transport) cost and quality
- Awareness and knowledge of cervical cancer screening and treatment processes
- Use of public sector and other health services before and after attention in the mobile units
- Take-up of cancer treatment services and reasons

The sampling framework for the Ixchen beneficiary survey is the total of individual beneficiary forms, available at the Ixchen HQ in Managua. There are various sampling approaches which can be considered for our research purposes. The advantage of a cluster sample is that it would make field work more efficient as we would be able to concentrate our work in a limited number of communities. However, the cost of this approach would be the additional sample size needed to obtain the same precision and representativeness as a simple random sample. Moreover, even in a cluster sample we still would have to cover a large number of clusters in order to avoid bias in the sample. The advantage of a simple random sample is that it is more efficient. Moreover, we have a complete sampling framework to draw a random sample from without incurring sampling bias. The disadvantage is that our observations will be more dispersed over the 75 municipalities covered by Ixchen. Nevertheless, the municipalities covered by Ixchen are (mostly) in Western and Northern Nicaragua and there are no major issues of accessibility.

The advantage of a simple random sample is a relatively straightforward approach to estimating population parameters. We can use sample size calculations for the case of a simple random sample as an approximation for our required sample size. Determining the required sample size for estimating a single parameter using a simple random sampling approach with a certain level of confidence (90%) and required precision (and unknown variability of key variables) is relatively straightforward. A fairly precise estimate of a population parameter such as the percentage of women having had its first screening of cervical cancer can be obtained under the following assumptions: confidence level of 90%, degree of precision 4% (real value could be 4% higher or lower than point estimate), estimated percentage of women between 15-49 who have never had cervical cancer screening varying between 18 and 48%.[21] The subsequent required sample size would be n = 420.[22]

[21] INIDE/MINSA (2008). These are general averages at department level. In the remote areas covered by Ixchen the percentage of women screening for the first time is likely to be higher than 48%. Yet, given the differences between departments as shown in the ENDESA data, we would have to work with a population parameter estimate of 50% which is the safest choice as it requires the largest sample size (in comparison to higher or lower percentages).

[22] Of course many more factors play a role in the final representativeness of the sample such as the non-response rate and sampling bias (which is very low given our reliable sampling framework). See Annex 7 for guidance on sample size determination for the case of estimation of a population proportion.

Analysis of different population parameters (e.g. means) of different variables, comparison of means, multivariate data analysis or subgroup analysis (etc.) all (may) imply different assumptions, different (more complicated) calculations of required sample size and larger samples sizes (under the same assumptions of precision). Given the fact that the above scenario for estimating a single parameter results in fairly precise estimates, and estimates of single parameters (or comparison with another sample from the ENDESA database) are a main concern we do not recommend a larger sample size. The chosen sample size in principle leaves some scope for additional multivariate analysis (based on our survey among Ixchen beneficiaries) such as regression analysis on the determinants of attitudes towards treatment of cervical cancer.

Finally, we briefly discuss some considerations for the planning of the qualitative research work in this study. The main method to be employed in this study is semi-structured interviews with key informants including representatives of different organizations (Ixchen, MINSA, local authorities), key community figures (*brigadistas* (community health volunteers) teachers, community leaders) and Ixchen beneficiaries, potential beneficiaries, and their families. Interviews will also be carried out at institutional level (MINSA, other organizations working in cervical cancer and screening programmes, donors, members of the National Alliance[23], etc), to address overall questions of relevance and some aspects of efficiency and effectiveness.

The timing of qualitative research will be integrated with programming for the quantitative work where necessary. Qualitative methods will be used for three purposes in this study: as a basis for hypothesis generation, delimitation (etc.) and questionnaire design of the survey; as a tool for deepening our understanding of particular issues which emerge from quantitative (survey) analysis; and as a stand-alone research method on research questions which are more appropriately explored through qualitative methods, including questions related to processes. In terms of timing this means that qualitative research will be carried out throughout the whole data collection phase: before, during and after the survey.

For stand-alone research, the team will draw up a complete list of the people to be interviewed at institutional and national level. Qualitative work at institutional level will be carried out by the international consultants in the team early in the implementation period. For data collection in the field (to be sub-contracted to CIES – see below), the number and type of persons to be interviewed and the number of locations to be covered will depend on the specific questions to be answered, not all of which can be specified at this stage. Maximum variability sampling, the idea of choosing different cases based on their heterogeneity on a particular variable or set of variables, helps to elucidate a particular aspect or effect from different perspectives. The knowledge saturation point in this case is difficult to determine. Therefore, we propose qualitative research to be undertaken in 5 separate programme implementation sites (allowing for some triangulation and differences in perspectives between and within sites) with some flexibility to expand research efforts where needed. Within each site, qualitative methods will include key informant and semi-structured interviews and in-depth case studies to explore the reasons behind different intervention outcomes. Interviews will cover a range of programme participants and beneficiaries, their families and members of their social networks, health providers, institutions, community leaders and others who

[23] National Alliance to Prevent Cervical Cancer, facilitated by MINSA

influence attitudes and health-seeking behaviour. Integration of the quantitative and qualitative research processes will be included in detailed work planning and programming at the start of the implementation phase.

Data for analysis of cost-effectiveness will be collected at HQ level in Managua, with Ixchen, Profamilia and MINSA. Timing of the cost effectiveness analysis will not affect the other data collection and will be programmed to dovetail with the other research activities.

7. Team composition, management arrangements and budget

7.1 Research team

The team will consist of international and national consultants, and two Central American organisations one of which will be sub-contracted to carry out field work and data analysis. The team will be coordinated by an international consultant as team leader.

The Central American organizations will be:

- Centro de Estudios para el Desarrollo Rural - CDR (Costa Rica) for development and analysis of the quantitative elements of the impact study, and
- Centro de Investigaciones y Estudio del la Salud, Universidad Nacional Autónoma de Nicaragua CIES-UNAN (Nicaragua) for the qualitative research work.

CDR

CDR is a consortium partner in the SRHR impact evaluation. CDR has ample experience in managing large surveys in Central America, with approximately 50% of its assignments carried out in Nicaragua. The organization has a substantial network in Nicaragua which can be mobilized for the purposes of the impact study. CDR lacks experience in some of the more substantive aspects of SRHR interventions and their context in Nicaragua. An alliance with CIES-UNAN and input from the SRHR experts in the international team (see below) will alleviate this shortcoming.

CIES-UNAN

CIES-UNAN has extensive experience in the field of SRHR issues and in qualitative research in Nicaragua. The organization has a high profile in health research within Nicaragua which will ensure credibility of study results at national level. CIES-UNAN also has a strong academic interest in the topic and will ensure that lessons learnt are used to strengthen capacity within the country.

More details of the criteria for choosing local organizations and the other alternatives considered are shown in Annex 8. Additional information on the two organizations is available on their web sites (www.cdr.or.cr; www.cies.edu.ni).

International consulting team

The international consulting team will include the following:

Team leader

The team leader (TL) will be responsible for overall management of the study and preparation of the final report, and synthesising the quantitative and qualitative research inputs. The TL will agree ToR, a work programme and a reporting schedule with the contracted organisations in Costa Rica and Nicaragua, and will provide technical support and supervision to the local contractors, reviewing the research plans and instruments, ensuring that quality controls are in place, and monitoring implementation. The TL may be involved in institutional interviews in an early stage of the implementation period. The TL will participate in meetings with stakeholders in Nicaragua and Europe as required. He will have project management experience, knowledge of SRH and rights in Nicaragua, and experience of quantitative and qualitative research.

International Team Member (ITM)

An international expert on sexual and reproductive health and impact evaluation will work with the TL in development of the study. The ITM will address research questions of relevance, efficiency and effectiveness at institutional and macro level, analysing the intervention's results within the context of national and international experience in cervical cancer screening. The ITM will provide technical input and support to the sub-contracted organizations on both the quantitative and qualitative research methods, with a special focus on the qualitative research team of CIES. She will work with CDR and CIES to ensure complementarity of research methods and compatibility between quantitative and qualitative research instruments, and will monitor progress on the field work and implementation. She will review and provide a critique of the research reports of the sub-contracted organizations. The ITM may also be involved in institutional interviews in an early stage of the implementation period.

National consultant

The national consultant will work under the supervision of the TL and will liaise with CDR and CIES on an on-going basis. He will provide input to the two organisations and carry out coordination with other stakeholders as required during the periods that the TL and ITM are not in-country.

Role of CDR

CDR will carry out the data analysis and field survey for the quantitative aspects of the study in Nicaragua. CDR will carry out the quantitative survey itself, including design of questionnaires, pilot testing, interviewer training, data cleaning and analysis. CDR will also carry out quantitative analysis of existing data, as indicated in the study design section. CDR has sufficient technical and professional capacity to design, implement and analyse the quantitative research. Additional support from international experts is not included in the CDR budget, but will be provided by the TL, ITM and the consortium's technical back-up team.

Role of CIES

CIES will be contracted for qualitative data collection and analysis. CIES will be responsible for development of interview guides and schemes for individual case study work, implementation of the field work and data collection, and processing and reporting on the qualitative work. CIES will receive technical supervision and support from the ITM, with input from additional short-term consultants if necessary. CIES will work with its permanent staff and will contract other short-term experts as appropriate.

Task division and coordination

ToR for the CDR and CIES contracts will be developed by the TL and will be fully discussed with the contracted organisations to ensure that the tasks, timing and responsibilities of all participants are clear. Coordination between the TL, ITM, CIES and CDR on a day-to-day basis will be facilitated by a local consultant who will work directly with CDR and CIES under the supervision of the TL, and will also liaise with the TL and ITM to provide local input on their behalf when they are not in-country.

Short-term consultants

Some additional short-term consultancy support will be provided in technical SRHR areas, cost-effectiveness, evaluation methodology and practice, and technical review of the impact study results. These inputs will be coordinated by the TL.

Other input

The Consortium will provide overall monitoring, quality control of the research process and facilitation of coordination with IOB, together with management support and financial administration.

7.2 Tentative schedule

On approval of the impact study proposal, the tasks will be carried out as shown in Figure 2:

PROPOSED WORK PROGRAMME FOR IMPLEMENTATION PHASE OF THE RESEARCH											
ACTIVITY	PERSON(S)	MONTH									
		J	F	M	A	M	J	J	A	S	O	N
Mid-term meeting with IOB	Consultancy consortium, TL											
Contracting research team and local organisations	Consultancy consortium, TL	X										
Study inauguration in Nicaragua; meeting with national reference group	TL, ITM, EKN, reference group	X										
Development of ToR and work plans for CDR, CIES and consulting team	TL, ITM, CDR,CIES, Consortium TL	X										
(visit to Nicaragua by TL and ITM)												
Design of research instruments and field work planning	TL, ITM, CDR, CIES	X	X									
Recruitment and traning of field work teams	CDR, CIES		X									
Field work and data analysis	CDR, CIES			X	X	X	X					
Monitoring	TL, ITM			X	X	X	X					
Report preparation by CDR and CIES	CDR, CIES. Input from TL and ITM						X	X				
Draft synthesis report finalised	TL							X	X			
Draft report discussed with country reference group	TL, CDR, CIES, EKN								X	X		
(visit to Nicaragua by TL and CDR)												
Draft report discussed in overall reference group in Holland	TL, TL Consortium									X		
Finalisation of country reports and approval of IOB	TL, TL Consortium									X	X	
TL= Team leader Nicaragua study												
TL Consortium= Team leader Holland, responsible for both country studies												
ITM= international team member												

8. Tentative budget

The budget will be sent in a separate document.

Budget notes

a) Central American research organizations

The CDR budget was developed in conjunction with CDR. The CIES-UNAN budget is an estimate based on the expected number of national consultant days, travel and per diem costs, supplies, administration and overhead costs. On finalisation of the proposal for qualitative work this budget will need further detailed work with CIES.

Notes on the CDR budget:

- Unit costs per observation include questionnaire design, sampling framework, training interviewers, pilot survey, implementation survey, transport, local DSA, data entry, institutional travel
- coordination and quality control of survey work is covered by consultant CDR 1
- data analysis under survey heading includes: survey, Ixchen data, ENDESA and other data
- travel in Nicaragua refers to transport costs additional to survey process
- With the current methodological design we do not need a highly specialized quantitative expert
- Consultant CDR 3 will be able to provide methodological feedback. Consultant CDR 2 will have solid background in statistics.
- Office supplies includes the thousands of copies for the survey, thousands of printouts for analysis, and other supplies for field work and data analysis; administrative support is for logistics, planning and administration

b) Consultancy team

TL

Contracting, development of ToR, visit to Nicaragua to start implementation and travel days- 12 days
Review of CDR/CIES research plans and instruments, review of their reports – 4 days
Monitoring – 5 days
Report preparation – 5 days
Discussion with reference groups and IOB, and finalisation of synthesis report – 4 days
TOTAL: 30 days

ITM

Analysis of the intervention's results at institutional level and within the context of national and international experience in cervical cancer screening. Participation in design of research instruments, planning, monitoring of field work implementation; – 17 days
Technical support of CIES, monitoring of implementation – 6 days
Review of research reports of sub-contractors – 4 days

Review and finalisation of synthesis report – 3 days
Total: 30 days

National consultant for in-country liaison: 25 days
(average 1 day per week during fieldwork and data analysis stages, with support for TL and ITM during country visits)

Short-term expert inputs
Technical SRHR input: 3 days
Evaluation methodology and practice - technical aspects: 2 days
Cost-effectiveness analysis: 4 days
Technical review of study results: 4 days
Quality assurance, discussions with reference group and IOB: 5 days (this does not include the TL's days on these tasks)
While the Phase 1 TL cannot be the Phase 2 TL for reasons discussed, expertise gained during Phase 1 will be capitalised upon by retaining Phase 1 TL as important short-term expert during Phase 2; this facilitates coherence.

c) Other costs

Travel and per diems international consultants
3 trips to Nicaragua (TL 2 trips, ITM one trip)
30 days per diem in Nicaragua
Transport in-country including field visits

National consultant
Travel in-country
Per diems for travel outside Managua

Translation
Translation of relevant sections of inception report for national consultants
Translation of final CIES report

Country-specific ToR for the Nicaraguan study are shown in Annex 9.

References

Arrossi S, et al. (2003). Incidence and mortality of cervical cancer in Latin America. *Salud Publica Mex*;45 suppl 3:S306-S314
ACCP (2002). Cervical Cancer Prevention. Key steps for meeting women's needs / Fact sheet. ACCP, Seattle
Alliance for Cervical Cancer Prevention (2004). Planning and Implementing Cervical Cancer Prevention and Control Programs: A Manual for Managers. ACCP, Seattle
Aronovich D, et al. (2009). Analisis del Mercado de anticonceptivos en Nicaragua. Arlington, Va.: USAID/Proyecto Deliver, Orden de Trabajo 1
Barten F (2009). Quality of Care in Nicaragua. Exploring experiences, challenges and opportunities *(unpublished paper)*
Chen, H.T. (1990) Theory-Driven Evaluation, Beverly Hills, Sage Publications.
Claeys P, et al. (2002). Determinants of cervical cancer screening in a poor area: results of a population-based survey in Rivas, Nicaragua. *Tropical Medicine and International Health*, volume 7 no 11 pp 935–941
Creel L (2000). Cervical cancer is a major health problem in LA. Population Reference Bureau, Washington D.C.
EKN (2007). Multi-annual strategic plan 2008-2011, Managua
Hindryckx P, et al. (2006). Prevalence of high risk human papillomavirus types among Nicaraguan women with histological proved pre-neoplastic and neoplastic lesions of the cervix. *Sex Transm Infect*;82:334–336. doi: 10.1136/sti.2006.019745
Howe S, et al. (2005). Cervical cancer prevention in remote rural Nicaragua: A programme evaluation. *Gynecologic Oncology* 99 S232 – S235
INIDE/ MINSA (2008). Encuesta Nicaragüense de Demografía y Salud (ENDESA) 2006/07. Republica de Nicaragua/Ministerio de Salud, Managua
INIDE/MINSA (2007). Informe preliminar. Encuesta Nicaragüense de Demografía y Salud (ENDESA) 2006/07. Republica de Nicaragua/Ministerio de Salud, Managua
Leeuw, F.L. and J. Vaessen (2009) Impact evaluations and development – NONIE guidance on impact evaluation, Network of Networks on Impact Evaluation, Washington D.C.
MINSA (2005). Plan Quinquenal de Salud 2005-2009. Republica de Nicaragua/Ministerio de Salud, Managua
MINSA (2008). Marco conceptual, Modelo de Salud Familiar y Comunitaria. MINSA, Managua
MINSA (2008). Estrategia Nacional de Salud Sexual y Reproductiva. Actuar hoy, para asegurar un futuro mejor para todos. Gobierno de Reconciliación y Unidad Nacional/Ministerio de Salud, Managua
MINSA (2008). Normativa – 009. Manual para promotores de salud "Preparándonos... para la lucha contra el Cáncer Cérvico-Uterino". Gobierno de Reconciliación y Unidad Nacional/Ministerio de Salud, Managua
MINSA (2008). Política Nacional de Salud. Gobierno de Reconciliación y Unidad Nacional/Ministerio de Salud, Managua

PAHO (2004). A situational analysis of cervical cancer in Latin America and the Caribbean. PAHO, Washington D.C.
PATH (2000). Planning appropriate cervical cancer prevention programs. PATH, Seattle
PATH (2000). Preventing cervical cancer in low-resource settings. An up-date of *Outlook,* Vol 16 No.1 May 1998.
Population Action International (2009). A case study of reproductive health supplies in Nicaragua. PAI, Washington D.C.
RNE (2004). Multi-annual strategic plan 2005-2008, Managua
Salvetto M, et al. (2003). External Quality Assurance for Cervical Cytology in Developing Countries. Experience in Peru and Nicaragua. Acta Cytol 2003;47:0000-0000)
UNAIDS (2008). Epidemiological factsheet on HIV/AIDS, Nicaragua. UNAIDS, Geneva
USAID (2006). State of the practice brief Nicaragua. Increasing Families' Access to Improved and Expanded Family Planning Services through Political Commitment
WHO (2006). Country Cooperation Strategy Brief Nicaragua. WHO country page http://www.who.int/countries/nic/en/ PAHO/WHO Country office web site http://www.ops.org.ni/ [accessed October 2010]
WHO/ICO Information Centre on HPV and Cervical Cancer (HPV Information Centre). Human Papillomavirus and Related Cancers in Nicaragua. Summary Report 2010. [accessed October 2010]. Available at www. who. int/ hpvcentre
World Bank, KfW/Gorter A, et al. (2002). Workshop on Output-Based Aid (January 24-25, 2002. Use of voucher schemes for output-based aid in the health sector in Nicaragua: three case studies
World Health Organisation (2010). World Health Statistics 2010.WHO, Geneva

Others: projects documents (Bemos, annual reports, evaluations, etc).

Annexes

Annex 1 Mission timetable and people met

Lista de contactos
SRHR Impact Evaluation- Nicaragua
20 de septiemnbre - 1 de octubre

Institución/ Organización	Informante	Cargo	Dirección	Telefono	Mail	Fecha de cita	Hora de cita	Observaciones
Embajada de Holanda	Maria Jesus Largaespada; Silvia Porras y Ardi Voets	Local health sector specialist	Calle Erasmus de Rotterdam 78 Carretera a Masaya km 5 Del Colegio Teresiano 1c sur, 1c abajo	2276 8630	maria.largaespada@minbuza.nl	20-09-10	8:00 AM	Confirmado
	Hans Wessels	Head of Development Cooperation	Calle Erasmus de Rotterdam 78 Carretera a Masaya km 5 Del Colegio Teresiano 1c sur, 1c abajo	2276 8630		21-09-10	8:30 AM	Será modificada si MINSA programa cita más temprano
Ministerio de Salud	Sonia Castro Gonzalez	Ministra de Salud	Complejo Nacional de Salud "Dra. Concepción Palacios" Costado Oeste Colonia Primero de Mayo	PBX: 289-4700	soniacg@minsa.gob.ni	21-09-10	TBD	Se ha solicitado cita por la mañana, pendiente confirmación aún, probablemente será después de las 10:30
UNFPA	Dr. Oscar Viscarra	Representante Adjunto	Colonia los Robles, Shell plaza el sol, 1 cuadra al sur 1½ cuadra oeste	2270-4506	viscarra@unfpa.org.ni	22-09-10	TBD	Se ha solicitado cita por la mañana, pendiente confirmación aún, probablemente será a primera hora para entrevistar a todos los involucrados.
PASMO/PSI	Donald Moncada	Director de Programa País	Carretera a Masaya, KM 10 y 1/4.	22760268 / 88862352	dmoncada@pasmo-ca.org	22-09-10	1:30 PM	Confirmado
IXCHEN	Argentina Espinoza	Directora	Del Colegio Teresiano 1 c al este.	22708127	ixchen@ibw.com.ni	23-09-10	4:30 PM	Confirmado
Donantes bilaterales	USAID, Finlandia, Austria, JICA, AECID - España		Embajada Países Bajos			23-09-10	2:00 PM	Confirmado
Fundacion Xochiquetzal	Hazel Fonseca	Directora	ITR de Ciudad Jardin 1 1/(2 c al sur Casa # 8	22490585	fxdir@turbonett.com.ni	24-09-10	9:30 AM	Confirmado
Asociacion Quincho Barrilete	Ana María Gutiérrez C.	Coordinadora de Atención Integral	Barrio Costa Rica de los Plasticos Modernos 2 c al sur, 1/2 c abajo	22498174 / 88170717	aqbarrilete@yahoo.com / atencionintegralaqb@yahoo.com.mx	27-09-10	2:00 PM	Confirmado
CIES	Miguel Orozco	Director	Rotonda Cristo Rey 75 vrs al sur	22783700 / 88837458	morozco@cies.edu.ni	28-09-10	2:00 PM	Confirmado
Nitlapan	Rene Mendoza		Campus de la UCA. Avenida Universitaria.	22781343 / 88326381	rmvidaurre@gmail.com	28-09-10	8:30 AM	
INIDE	Lic. Marcos Valle	Director	Residencial Los Arcos Frente el Hospital Lenin Fonseca	22662825				
Puntos de Encuentro	Irela Solorzano	Directora	Rotonda Plaza España 4 c. abajo 1 c. al lago	22681227	puntos@puntos.org.ni	24-09-10	4:00 PM	Confirmado
IPAS	Marta Maria Blandon	Directora	Hotel Holiday Inn Managua.	22772012	blandonm@ipas.org	23-09-10	10:30 AM	Confirmado
FIDEG	Sonia Agurto	Directora Ejecutiva	Bolonia, De PriceSmart 2 cuadras al lago	22668708	sagurto@fideg.org			
	Albertina Urbina	Diputada	Palacio de la Cultura. Oficinas del Parlacen	8423 3676 / 2713 3038	urbinazelaya@yahoo.com	30-09-10	1:30 PM	Confirmado / Llamar un dia antes para reconfirmar, considerando que ella vive en Esteli y ese dia estara en Managua

Annex 2 Policy framework of SRHR

Policy context – other policies which affect SRHR

National Population Policy, and supporting Plan of Action (2001-2005)	One of the objectives is related to the enhancement of capacity of the population to make decisions on their reproductive and sexual behaviour in order to decrease irresponsible and early reproduction.
Economic recovery and Poverty Reduction Strategy (2001-2005)	The Strategy focuses on economic and social policies to improve basic and health conditions of the population, especially targeting the most in need, reiterating objectives as stated in the National Health Plan including a basic health package; the implementation of an integrated model of reproductive health; strengthening of programmes to increase coverage and quality of health services; addressing sanitation and nutrition; and increased coverage of FP for women of reproductive age.
National Youth Development Plan for the Development of Youth (approved in 2001)	The plan recognises the importance of sexual and reproductive health of adolescents and youth, promoting youth friendly services (responding to the heterogeneity and the specific needs of young people).
National Education Policy and Plan (2001- 2015)	Among the strategies the Policy proposes attention to nutritional status and basic health of children to ensure their healthy development; to counterbalance gender inequalities; to promote a human rights focus; and promote attention to sexual and reproductive health issues at universities.
Public Policy to combat sexual and commercial exploitation of children and adolescents (2002)	The Policy provides a conceptual framework for actions taken by State and Non-State Actors to understand the phenomenon and develop appropriate strategies to combat sexual and commercial exploitation of children and adolescents.
National Gender Equity Programme (2006 – 2010)	The National Gender Equity Programme is considered instrumental in achieving the MDGs, focusing on the needs of women and their participation in development through their empowerment and autonomy. The objective of the NGE Programme is to create conditions for the eradication of violence and generate gender equity in domains including education, health, work, political participation and in gaining access to (and control of) productive means.
National Development Plan	The NDP provides a national reference and guidance in the macro-economic and social policies of the Government.
The Constitution of Nicaragua (1987, with revisions in 1990 and 1995) update?	The Constitution recognises the Right to life and to health of all Nicaraguans and underline State's obligations to establish the basic conditions for their promotion, protection, and recuperation. The Constitution promotes norms to protect the human reproduction process, and to to exercise responsible parenthood and childhood; and outlines that family relations should be based on principles of equally in rights and responsibilities between men and women.

Laws in area of Health and SRHR	Law 150 (Penal Code): sanctioning sexual delicts Law 185 (Código del Trabajo): protection of maternity, disabled people and the elderly Ley 212 (Ley de la Procuraduría para la Defensa de los Derechos Humanos): the Insitutute of HR detects violations and creates awareness on HR. Ley 230 (nuevas reformas al Código Penal): penalises intrafamily violence Ley 238 -Ley de Promoción, Protección y Defensa de los Derechos Humanos ante el SIDA (1998) Ley 287-Código de la Niñez y la Adolescencia (1998) Ley 295-Ley de Promoción, Protección y Mantenimiento de la Lactancia Materna (1999) Ley 423-Ley General de Salud (2002) Código Civil (1904), Ley reguladora de las relaciones entre Estrategia Nacional de Salud Sexual y Reproductiva Madre, Padre e Hijos (1982) la Ley de Seguridad Social (1982) y la Ley de Educación Popular para la Salud y su difusión gratuita (1988). Ley No 28, Estatuto de la Autonomía de las Regiones de la Costa Atlántica (1987).

Annex 3 Other relevant projects supported by EKN in the study period

OVERVIEW OF EKN'S SUPPORT TO HEALTH AND SRHR IN NICARAGUA 2005 – ONGOING		
Intervention/programme	**Years/financial input**	**Comments**
FONSALUD/budget support to the health sector	2005-2009 10 million Euro	Sector support *Conclusion: not eligible based on the exclusion criteria set by IOB[24])*
UNICEF: Country Programme Support	2008-2012 7 million Euro	Parallel funding with SIDA, aim focusing on child survival, basic education and gender equality, HIV/AIDS and children, child protection. *Conclusion: not eligible as not focused specifically on SRHR*
UNFPA: SRH and RR support programme	2008-2012 4,5 million Euro	Focus on adolescent reproductive health and rights *Conclusion: multi-donor support (Denmark, Finland); the intervention has recently started, impact evaluation not yet possible*
Consortium PSI/PASMO, Quinto Barrileto, Ixchen, Fundacion Xochoquetzal: XXX	2009-2012 USD 6 million	Multi-focused (related to missions of the 4 organisations involved). *Conclusion: interventions recently started/follow up to previous supported programmes therefore not suitable for this impact study*
PROSEDE: business development programme (by INDE)	2007-2010 USD 5 million	Focus on engagement of the private sector (rural farmers) and on female headed households. Continuation of previous support *Conclusion: indirect link with SRHR*
UNFPA: Reproductive Health Commodity Security in rural areas	2007-2009 USD 5 million	Critical component of UNFPA's efforts to contribute to IPCD and MDG5. Focus on poorest, most isolated regions ***Conclusion: eligible candidate for impact study (for argumentation see section 3)***
Ixchen: prevention of cervical cancer programme	2005-2008 USD 2.4 million	Prevention of cervical cancer addressing major health problem with human rights based approach ***Conclusion: eligible candidate for impact study (for argumentation see section 3)***
PSI/PASMO: HOV Prevention Behaviour Change Communication and Condom Social Marketing	2003-2004 659,000US$	BCC and social marketing with high risk groups. Only partially within the impact study time period: relatively small project Conclusion: Not an eligible candidate for study on its own, but could be combined with the follow-up project (see below)

[24] ToR Country Evaluations: "In Nicaragua the focus of the study will be on programme support to UNFPA and project support to NGOs" (page 16 of annex to tender document)

OVERVIEW OF EKN'S SUPPORT TO HEALTH AND SRHR IN NICARAGUA 2005 – ONGOING		
Intervention/programme	**Years/financial input**	**Comments**
PSI/PASMO: Expanding and Sustaining HIV Prevention and Reproductive Health Social Marketing in Nicaragua	2005-2009 USD 1.7 million (+300.000 extension)	Behaviour change communication and condom social marketing activities; and expansion of its programme to include hormonal contraceptive social marketing. ***Conclusion: eligible candidate for impact study (for argumentation see section 3)***
National Police: victims of sexual violence	2009-2012 1 million Euro	*Conclusion: the intervention recently started and is indirectly linked to SRHR*
FONDOFED: support to international NGO (FORUMSYD)	3 years (no date) USD 800.000	Focus on strengthening of civil society, promotion of gender equality, reduction of stigmatism *Conclusion: indirect link to SRHR*
Quincho Barrilete	2005-2008 USD 680.000	Targeting victims of commercial sexual exploitation *Conclusion: because of relatively small contribution of EKN not eligible for impact study*
HIVOS/FED (Fondo Equidad Derechos)	2009-2012 566.000 Euro	Basket funding for projects in area of equity and SRHR (Norway and NL) *Conclusion: not eligible because of limited size of EKN input, and multi-donor nature of the support*
Fundacion Xochiquetzal: prevention and integrated care of people with STIs and living with HIV/AIDS	2005-2008 USD 486.000	Focus on access to services and prevention *Conclusion: relative small contribution of EKN*
INIFOM: strengthening municipal governments	2009-2010 900.000 Euro	*Conclusion: no link with SRHR?*
FONDO comun: civil society strengthening	2006-2008 (pilot phase) USD 410.000	*Conclusion: contribution as part of a multi-donor fund; indirect link with SRHR*
Mifamilia: responsible parenthood	2004-? USD 120.000 (NL support, total: 350.000)	Support to the Ministry of Family promoting a legal framework for women's and children's rights and addressing gender inequality *Conclusion: multi-donor support, relative small contribution of EKN and indirect link with SRHR*
INIM: national campaign domestic violence (interfamily)	Year not stated, 6 months support USD 100.000	Support to campaign organized by a decentralized institution of the family *Conclusion: limited support; indirect link with SRHR*
AMNLAE: advocacy for 'Ley Igualdad'	2003? USD 83.000	Advocacy to support Law on equality *Conclusion: limited support; indirect link with SRHR*
IEEPP: safe motherhood 2015	2009-2010 43.000 Euro	Support to parliamentarians in relation to advocacy for Safe Motherhood *Conclusion: limited support; indirect link with SRHR*

Annex 4 Preliminary mapping of cervical cancer screening programmes

Preliminary mapping of prevention of cervical cancer programmes in Nicaragua (2000 – 2009)

In 2000[25] ICAS established the "Comprehensive Programme for Prevention and Detection of Cervical Cancer"; a programme which since 2005 included also the prevention of breast cancer. The programme provides an effective strategy in the fight against cancer at low cost. This is achieved through the distribution of vouchers known as GINECOBONOS to increase the coverage of screening for women in areas identified by the Ministry of Health (MINSA). Coverage: screening of 38 564 women in Nicaragua from all over the country, including Siuna, Mulukukú, Ocotal, Jalapa, Somoto, Estelí, Matagalpa, Jinotega, Juigalpa, Rivas, Granada, Masaya, Chinandega, Leon, Boaco, Carazo, leon and Managua (Ticuantepe, Tipitapa). The programme has received funding from the British Embassy and DFID (vouchers and Siuna Mulukuku), USAID (Profamilia vouchers in almost all departments of the country), Netherlands Embassy (SILAIS Managua); Gurdián Ortiz Foundation (SILAIS Jinotega, Matagalpa, Boaco, Carazo, Masaya, Granada, Rivas, Chinandega and León) and Life Building Project (Managua SILAIS). 2005 the Ginecobono programme has been funded by the Foundation Gurdián Ortiz (FOG). FOG has donated 24000 vouchers to the Ministry of Health free of charge.

In 2003[26], three organizations combined efforts to extend a new cervical cancer prevention programme into Nicaragua's remote, medically underserved North Atlantic Autonomous Region (RAAN). These include the Clinica de Mujeres/Cooperativa Maria Luisa Ortiz (MLO Clinic), the Ginecobono program, and the Nicaraguan Ministry of Health (MINSA). All three organizations have prior experience with cervical cancer prevention. Their combined efforts have created an effective remote rural service network, centralized quality-controlled cytology, coordinated treatment in the capital city of Managua, and a system of national strategic planning. The Clinica de Mujeres/Cooperativa Maria Luisa Ortiz (MLO Clinic) has been established since 1990 and is run by a women's cooperative in Mulukuku, Nicaragua. The clinic administers Pap tests and conducts outreach through health education, mobile clinics, a network of 20–40 health promoters, radio announcements, and transportation couriers. The Ginecobono Programme was established in 2000 by Instituto Centroamericano de la Salud (ICAS), a nonprofit health services research organization. Ginecobono is designed to remove barriers to cervical cancer prevention in Nicaragua. The programme distributes donated vouchers covering Pap tests and any necessary diagnostics and treatment. In addition, Ginecobono coordinates external quality control of both cytology and histopathology services, arranges same day diagnostics and treatment procedures in Managua, and assists clinics by maintaining centralized data information systems. The Nicaraguan Ministry of Health (MINSA) facilitates the National Alliance to Prevent Cervical Cancer, utilizes strategic planning to reach areas in most need, and encourages cooperation between sectors.

[25] Information adapted from: http://www.icas.net/new-icasweb/english/en_cancer.html information retrieved October 27, 2010).
[26] Information adapted from: Howe et al., 2005

In 2008[27], National Cancer Control Plan has been finalized with support from PAHO/WHO. A National Committee for Cancer Prevention & Control was established in 2008 and working groups have been formed in the areas of palliative care, human resources training & research, treatment, civil society, advocacy and communication, information systems (cancer registration), cervical cancer, breast cancer and paediatric cancer. Activities in prevention and early detection are ongoing, such as TV radio-novel on cervical and breast cancer and radio interviews with cancer experts. Use of VIA for the early detection of cervical cancer has increased, and training on VIA and cryotherapy has already been conducted in the SILAIS of Matagalpa, Jinotega, and Nueva Segovia. PATH, UICC and other NGOs are actively working in cervical cancer prevention (FastHPV Test). There are now 25 units for the treatment of pre-cancerous lesions in the entire country. In Nicaragua UICC's efforts concentrate on strengthening the capacity of the Ministry of Health within the framework of the National Cancer Control Plan. In collaboration with PATH, the National Cancer Institute of Peru - INEN, the University of Buenos Aires and the Swiss non-governmental organization AMCA, UICC has been supporting training in VIA, colposcopy, LEEP and pathology of a core group of master trainers from the Ministry of Health. Further training and scaling up to more provinces are being planned. The trained clinical team started working on a VIA and cryotherapy strategy in 2009, being the first clinical team in Nicaragua to do so. Planned activities for the near future include contributing to strengthening national prevention services as part of the national Cervical Cancer Strategy, as well as working with key partners and stakeholders in the country to map out current and planned activities, as well as gaps to be addressed.

Through the UNFPA RHCS Global Programme (which includes support to MoH and the NGO PATH) support in the area of cervical cancer (**2009**)[28] is provided to:

- The development of a manual for the prevention of *cervical cancer* for community health promoters;
- The management of early cervical cancer lesion to 19 clinics (of which 6 are operational in the Clinical management of early lesions of cervical cancer');
- Capacity building in the context of the 'Programme for early detection and management of Cervical Precancerous Lesions';
- Software CANREG 4 for the registration of cancer.

Best practices as noted by UNFPA are: the MoH - with technical and financial assistance from UNFPA and PATH - has set up 6 clinics for early prevention and management of CaCu. Data from the Masaya clinic are listed below:

- Outpatient consultations increased from 1.064 in 2008 to 1.394 in 2009;
- Detection of cervical cancer cases, from 70 in 2008 to 142 in 2009;
- The average age of female clients is 25 years;
- Cryotherapy increased from 30 in 2008 to 135 in 2009;
- Colposcopy biopsies increased from 41 in 2008 to 502 in 2009;
- Diathermy loop treatment increased from 0 in 2008 to 4 in 2009;
- Treatment of genital wart increased from 0 in 2008 to 48 in 2009).

Other smaller projects[29] include a 'Cervical cancer prevention programme' (in **2008**, financed by coffee producers) in Matagalpa, Jinotega. Part of global Ground for Health Volunteers 'Screen and treat programme': visual inspection and rapid Pap smear analysis.

[27] Information adapted from: http://cancer.iaea.org/amro.asp - info retrieved 27 October, 2010
[28] GP/ RHCS Annual Report. January to December 2009, Nicaragua. January 2010

Background info on an impact study in CaCu (only abstract found – study not published):
Impact of a Nurse-Managed, Community-Based Breast and Cervical Cancer Education and Screening Programme on High-Risk Underserved Women in a Nicaraguan Barrio. Objectives: To determine the impact of a nurse-managed community-based breast and cervical cancer screening programme on the knowledge level and perceived benefits of women in a Nicaraguan barrio and in diagnosing cancer early.
Design: This pilot intervention study used a pretest-posttest within-subject, quasi-experimental design to compare outcomes prior to and six months following participation in a screening program.
Population/Sample/Setting/Years: In 2002-2003, 320 high-risk underserved women living in a Nicaraguan barrio of nearly 10,000 residents were randomly selected to participate.
Intervention/Outcome Variables: The screening program, developed by Nicaraguan nurses following an educational programme sponsored by US nurses, was implemented through the barrio's nurse-managed clinic. Women learned BSE, received breast and Pap/pelvic exams, and were case-managed through mammograms and follow-up treatments provided by collaborative Nicaraguan partners. Outcomes were measured through private interviews using the Spanish version of Barriers to Breast and Cervical Cancer, previously used in Nicaragua. Knowledge of breast and cervical cancer, benefits of screening, and cancer stage at diagnosis were tracked.
Methods: Women were interviewed prior to and approximately six months following the screening programme and offered follow-up treatment at no cost.
Findings: All women completed the program. Posttest measures revealed positive outcomes. Five women had cervical cancer, two HPV, and 90% infections/STDs. Following study completion, one woman who sought treatment after hearing about the program, was diagnosed with breast cancer. Positive evaluation data were obtained through focus groups.
Conclusions: This pilot programme provides an alternative screening model that can assist Nicaraguan health officials in reducing cervical cancer morbidity/mortality. Its value in detecting breast cancer needs revisited. Implications: Creative community-based models for cancer screening are essential in reducing health disparities among vulnerable populations in developing countries like Nicaragua. Nurses assumed a leadership role in improving quality of life by minimizing the need for extensive, costly cancer treatment.

[29] Information from: http://www.groundsforhealth.org/ info retrieved 27 October, 2010

Annex 5 Ixchen data on project coverage

Ixchen's outreach at municipal level during the intervention period

Table A6: Outreach at department level during the intervention period						
	2006		2007		2008	
Departamento	Mujeres atendidas	Citologías realizadas	Mujeres atendidas	Citologías realizadas	Mujeres atendidas	Citologias realizadas
Boaco	381	292	1.168	1.182	2.145	2.167
Carazo	941	846	1.872	1.646	4.088	2.829
Chinandega	1.258	847	2.187	1.931	6.377	4.860
Chontales			930	896	4.360	8.262
Granada	455	344	1.696	1.403	3.800	3.333
Jinotega	589	562	621	614	2.083	2.125
León	1.692	1.242	3.341	2.923	7.129	5.780
Managua	13.331	7.934	10.613	9.270	32.186	23.792
Masaya	3.037	1.782	775	626	5.321	3.387
Matagalpa	5.063	4.106	3.037	2.690	9.429	2.065
N. Segovia	462	429	355	350	2.275	3.886
Rivas	1.593	1.032	1.790	1.400	4.276	2.874
Total	**28.802**	**19.416**	**28.385**	**24.931**	**83.469**	**65.360**

Note 1: Confusingly, the data in the columns of 2006 and 2007 are annual data, whereas the 2 columns of 2008 show cumulative data. Possible errors in the data (such as the lack of consistency in the Matagalpa data) will be corrected in the second phase of the evaluation.

Note 2: The first column for each year indicates the number of women that have received attention; the second column indicates the number of women that have been screened for cervical cancer.

Source: Ixchen data.

Annex 6 Relevant variables available in the ENDESA 2008 database

Data from the ENDESA database will be used to analyze how Ixchen clients differ from the overall target population of women (that have already been screened for cervical cancer). This analysis will be done in two steps. First, the creation of a sampling framework, which allows for adjusting the ENDESA sample for known differences with Ixchen's target group (such as location). Second, a comparison of the ENDESA sample with the Ixchen beneficiaries sample.

Variables to be used for creating a sampling framework for comparison with Ixchen beneficiaries:

- department: departments in which the Ixchen intervention has been active
- urban/rural: rural
- cervical cancer screening: having been screened for cervical cancer at least once

(Categories of) variables to be used in the comparative analysis of the two samples:

- individual and household characteristics (family situation, education, etc.)
- socio-economic description (assets, livelihood activities, etc.)
- knowledge of and attitudes to SRHR
- health-seeking behaviour and reasons behind it
- use of public sector and other health services (especially regarding SRHR)
- awareness and knowledge of cervical cancer screening and treatment processes
- take-up of cancer treatment services and reasons

Annex 7 Guidance for sample size determination

Guidance to sample size determination for a single population proportion: required sample sizes with 95% confidence, different levels of precision and estimated proportion (simple random sample)

Absolute precision	Estimated proportion (p)							
D	0.010	0.025	0.050	0.100	0.200	0.300	0.400	0.500
0.005	1.522	3.746	7.300	13.830	-	-	-	-
0.010	381	937	1.825	3.458	6.147	8.068	9.220	9.604
0.020	-	235	457	865	1.537	2.017	2.305	2.401
0.050	-	-	73	139	246	323	369	385
0.100	-	-	18	35	62	81	93	97
0.150	-	-	8	15	28	36	41	43

Annex 8 Options for collaboration with local partners

Table A6. Eligibility of local partners for collaboration in the second phase of the evaluation				
	ALVA	CIES-UNAN	FIDEG	CDR
Experience in the field of public health / SRHR interventions	high	high	low/medium	low/medium
Experience in implementing large-scale surveys	high	medium	high	high
Experience in qualitative research on public health / SRHR issues	high	high	low/medium	low/medium
Scope for consortium consultants to participate in/control quality of research process	low/medium	high	medium	high
Methodological standards (survey research process)	low/medium (mostly dependent on external consultants)	low/medium (mostly dependent on external consultants)	high	high
Contacts with relevant institutions in the field of SRHR in Nicaragua	medium	high	low (dependent on external consultants)	medium
Cost (estimate of unitary cost per questionaire)**	high	low/medium	high	high

* Studies implemented in countries other than Nicaragua.

** It is very difficult to develop a reliable estimate of field work costs without further information on such aspects as sample size (fixed versus variable costs), degree of quality control and accessibility and size of territory to be covered by the study. Moreover, different definitions of what is included (e.g. quality control by extra consultant) make it hard to compare between organizations. ALVA reports a unitary cost of 20-32 US$ per questionnaire. CDR reports a 30 US$ unitary cost per questionnaire (based on recent MFI impact study). FIDEG with its elaborate system of quality control is likely to report similar rates or higher.

Proposal and justification for involvement of local organizations

Proposal: CDR and CIES-UNAN

CDR is a consortium partner in the SRHR evaluation. CDR's involvement in the design as well as the analysis and write-up of the findings of the evaluation, is a definite advantage when it comes to choosing an organization which is going to manage the empirical work on site. CDR has ample experience in managing large surveys in Central America. The direct link between data collection,

analysis and write-up will enhance the quality of the work. CDR can be justifiably considered a local organization with approximately 50% of its assignments carried out in Nicaragua. Moreover, CDR has a substantial network in Nicaragua which can be mobilized for the purposes of the evaluation. CDR lacks experience in some of the more substantive aspects of SRHR interventions and their context in Nicaragua. An alliance with CIES-UNAN would alleviate this shortcoming. CIES-UNAN lacks the capacity to manage and implement a survey research process of a high standard, yet has extensive experience in the field of SRHR issues in Nicaragua. Moreover, CIES-UNAN could offer an added value in some of the qualitative research work to be done within the framework of the evaluation. CIES-UNAN also has a strong academic interest.

Annex 9 Country specific ToR for Nicaraguan study

SRHR Impact Evaluation. Terms of Reference for Inception phase – Nicaragua

Context
This evaluation is one of a series of impact evaluations in the field of sexual and reproductive heatlh and rights (SRHR) to be carried out by IOB during 2010 and 2011. The evaluations are aimed at identifying the relevance, effectiveness and efficiency of the Dutch contribution in selected countries. The focus will be on the outcome (i.e. access to and utilization of services, including familiy planning; quality of services) of health and SRHR programmes supported by the Netherlands, between 2004 and 2009.
The evaluation in Nicaragua will be carried out during 2010 and 2011, and consists of two phases: the inception phase which is the subject of these ToR and will be completed by December 2010; and the implementation phase which will be carried out during 2011. During the period to be covered by the evaluation (2004-2009) the Netherlands have provided sector support for health, programme support for UNFPA and UNICEF, and project support for several NGOs in the area of SRHR. The Nicaraguan evaluation will focus on Dutch support for UNFPA and NGOs.

Objective
The objective of the inception phase is to develop a research proposal for the evaluation, including an appropriate study design and a plan for data collection and analysis in the implementation phase. The research proposal will cover selection of the interventions to be included, the method of approach for evaluation of each of those interventions including qualitative and quantitative methods, an overall activity plan and an indicative budget. Comprehensive design for data collection including final definition of samples, research instruments and methods for data analysis will be included as the first activities in the implementation phase.

Deliverables
Inception report containing:

1. Description of the SRHR context including policy and practice, and key changes which have occurred during the evaluation period (2004-2009).
2. Overview of Netherlands MFA's support to the Nicaraguan health sector, focusing on assistance through multi- and bilateral channels and to (inter)national NGOs active in the area of SRHR. This will focus on support during the evaluation period 2004-2009, with a summary of current areas of support where different.
3. Selection of options for detailed evaluation in the implementation phase of the consultancy, indicating the specific areas to be evaluated and the type of methods to be used. The selection will be based on review and analysis of the main characteristics of each project (see evaluation matrix format) and a check-list of selection criteria which will be developed by the evaluation team. Final selection of projects will be carried out in consultation with stakeholders in-country. The report will include an overview of information which is already available on each project and existing data sources.

4. Design of evaluation methodology for each selected intervention, including research questions/hypotheses, inventory of materials and information to be used, data collection methods to be used (qualitative and quantitative), time schedule and resources needed. The evaluation design will be sufficiently detailed for budgeting and planning purposes.
5. Selection of local institutions for data collection phase and definition of their role.
6. Indicative budget for the implementation phase.
7. Proposed composition of the local reference group.
8. Draft ToR for Phase 2 of the IE.

Approach

Prior to field visit:

- ✓ Collection of literature and analysis of key points (Esther, with input from all team members);
- ✓ Development of evaluation matrix (Jos to do first draft)
- ✓ Insertion of available information into matrix (Meg)
- ✓ Draft of policy context (point 1 above) (Meg)
- ✓ Check-list of criteria for selection of interventions (Meg, input from all)
- ✓ Discuss arrangements for local consultants and research group(s) (Meg, Jos, Joanne)
- ✓ Indicative list of people to be interviewed

Field visit:

- ✓ Introduction of team at EKN (local Embassy of the Netherlands) by IOB
- ✓ Meeting with MOH authorities and other stakeholders to introduce the IE, collect relevant information and discuss proposed options for the research. This may include field visits to sites where projects have been implemented to assess quality of existing data and any constraints on posterior data collection
- ✓ Confirmation of arrangements with local consultants and research groups as required, and preliminary briefing
- ✓ Agreement on plans for implementation phase (EKN, MOH and key stakeholders, local reference group); this will be done at the end of the field trip, possibly in a short workshop session.
- ✓ Allocation of responsibilities for report-writing

After field visit:

- ✓ Preparation of inception report.
- ✓ Presentation of draft report to IOB

Team composition

Team leader:	Meg Braddock
Team members:	Esther Jurgens
	Jos Vaessen (second week of field work)
	Alejandro Uriza
Joining the team from IOB:	Marijke Stegeman: 1st week
National authorities joining the team:	To be discussed with EKN…

Planning

Field visit:	Nicaragua: 20th Sept to 1st October
Delivery of inception reports:	Mid October internally in consortium
	Mid November to IOB (latest 31 Dec as per contract)