

Mother and Infant Research Activities (MIRA)

YB Bhawan, Thapathali-11, Kathmandu

Organization Profile

A. BACKGROUND OF THE ORGANIZATION

Introduction

Mother and Infant Research Activities (MIRA) is a national, non-government, non-profit organization established in 1992 with an initiative from Prof. Anthony Costello of the Institute of Child Health, University College London, UK and a group of leading perinatologists in Nepal led by Dr. Dharma S. Manandhar. MIRA was established to conduct studies and develop appropriate and cost-effective interventions to improve maternal and child health in the country. MIRA is run by a group of experienced and committed Nepalese health and development professionals and has conducted several studies to look at important causes of perinatal and neonatal problems in the country. In addition to research, MIRA has provided several trainings and published more than 150 articles in different national and international journals till now. MIRA works closely with the government sector and was also involved in the development of the National Neonatal Health Strategy of the Ministry of Health for improving the care of new-borns at each level of care.



Mission

MIRA's mission is to improve the health of the mothers and the new-born babies by reducing maternal, infant and neonatal mortality and morbidity through research, training, service delivery, publication and advocacy.



Aims and Objectives

The aims and objectives of MIRA are:

1. To carry out researches for the development and promotion of maternal and child health in the country.
2. To use the results of research activities for the welfare of mothers and children.
3. To expand programmes proven to be successful in reducing maternal, neonatal, child and infant mortality and morbidity by working with government and non-governmental organizations.
4. To improve maternal, neonatal, infant and child health through provision of resources and trainings for various levels of health workers in the government and non-government institutions in Nepal.
5. To provide Essential New-born Care (ENC) training and information, education and communication materials.
6. To advocate improving maternal, neonatal, infant and child health.



Administrative and Legal information

Type of organization: Non-government Organization (NGO)

Registration details:

- a. Place of registration: District Administration Office, Kathmandu
- b. Date of registration: 29-04-1994
- c. Registration number: 366/050/51
- d. PAN no.: 301875491

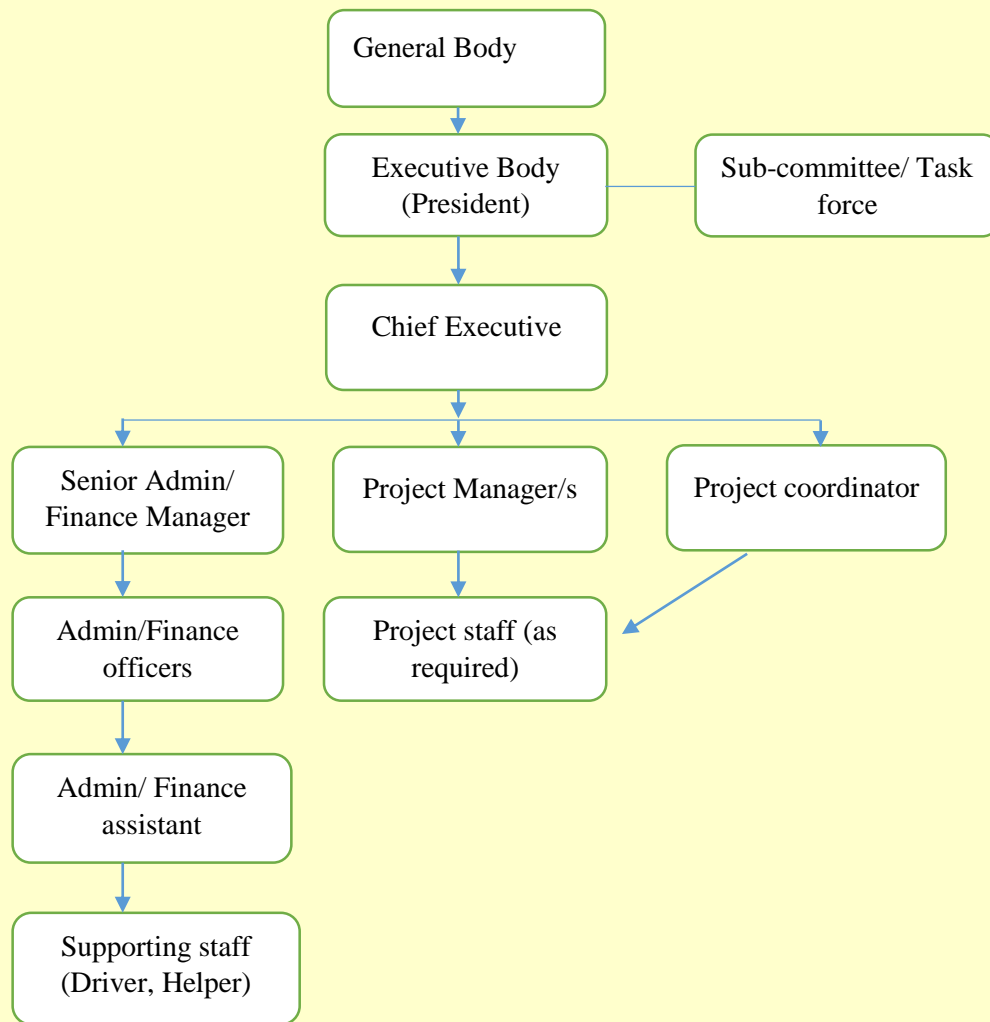
Contact details

- a. Office address: YB Bhawan, Thapathali -11, Kathmandu
- b. Telephone number: 01-5906292; 01-5906702
- c. Official email address: info@mira.org.np
- d. Contact Person: Dr. Dharma Sharna Manandhar; Chief Executive, MIRA
Email: dsm@mira.org.np



Present Executive Board of MIRA (FY 2021/22 to FY 2023/24)

S.N.	Name	Position	Field of Work	Qualification
1	Dr. Banshi K. Malla	President	Ophthalmology	MBBS, MS in Anatomy, DOMS
2	Dr. Jyoti Ratna Dhakhwa	Vice President	Paediatrics	MBBS, DCH
3	Dr. Sunil Raja Manandhar	Secretary	Paediatrics	MBBS, MD
4	Mr. Jyoti R. Shrestha	Treasurer	Public Health	MPH, IT in Health
5	Dr. Kasturi Malla	Member	Obstetrics and Gynaecology	MBBS, DGO, FAMS
6	Dr. Kulesh Bahadur Thapa	Member	Paediatrics	MD, DCH
7	Dr. Madan Manandhar	Member	Business Administration	Ph.D in Management

Management structure of MIRA

B. ACTIVITIES

There are four major activities of MIRA:

1. Research
2. Training
3. Advocacy and
4. Publication

I. Research

Research is one of the major working areas of MIRA. Over the past 28 years, MIRA has conducted several studies in health sector, especially on maternal, neonatal, infant and child health sector. Some of the relevant research studies conducted by MIRA in past 27 years are given below:

1. Study on perinatal nutrition

Study area: Paropakar Maternity and Women's Hospital (Prasuti Griha), Thapathali, Kathmandu

Study year: 1992 to 1993

Funder/Collaborator: University College of London (UCL), UK

This study done on mothers and new-borns showed high incidence of low birth weight (LBW) (32%) among the new-borns and hypoglycemia (48%) in the first 48 hours of life. It also showed significant poor nutrition among the mothers.

2. Case control study on birth asphyxia

Study area: Paropakar Maternity and Women's Hospital (Prasuti Griha), Thapathali, Kathmandu

Study year: 1993 to 1996

Funder/Collaborator: University College of London (UCL), UK

This was a study conducted on babies born at Prasuti Griha. This study revealed neonatal encephalopathy in 6.1% new-borns which was much higher than in developed countries at that time. The study found significant association of neonatal encephalopathy incidence with the use of uterotonic drugs which were used without proper supervision and timely intervention.

3. Cluster Randomized Trial (RCT) on the effects of Participatory Women's Group on maternal and new-born health

Study area: Makwanpur

Study year: 1999 to 2009

Collaborator: University College of London (UCL), Institute of Child Health (ICH), UK

Funder: UNICEF, UNFPA





In this study, participatory women's group were actively engaged to discuss on problem identification, prioritization, implementation of community based interventions and evaluation with the help of a facilitator on maternal and newborn health in 12 VDCs and without any such activities in other 12 VDCs. This study revealed a 30% reduction in neonatal mortality. This was the first study done on such a large scale with cluster randomization which showed

such an impact in neonatal mortality reduction by community mobilization and participation.

4. Double Blind Randomised Controlled Trial (RCT) on the effects of multiple micronutrient supplementation in pregnant women in birth weight, gestation and neonatal and perinatal mortality rates

Study area: Dhanusha

Study year: 2002 to 2004

Collaborator: University College of London (UCL), Institute of Child Health (ICH), UK

Funder: DFID, Save the Children, World Food Programme

Out of 1200 pregnant women enrolled in this study, 600 were randomly allocated to receive multiple micronutrients and 600 to iron and folic acid tablets. This study showed that birth weight of babies born to mothers who received multiple micronutrients were on an average 77 grams heavier compared to babies whose mothers received iron and folic acid tablets only. The supplementation also helped to reduce the incidence of LBW by 25%. There was no statistical significant effect on length, head circumference, gestational age of the baby and neonatal and perinatal mortality rates among the two groups. Follow up studies of these babies were carried out at 2 years of age.



5. Study on network to empower women to improve own and child health

Study area: Makwanpur

Study year: 2008

Collaborator: University College of London (UCL), Institute of Child Health (ICH), UK

Funder: DFID

6. Cluster Randomised Trial on effect of Health Management Committees to increase institutional delivery

Study area: Makwanpur

Study year: 2009 to 2013

Collaborator: University College of London (UCL), Institute of Child Health (ICH), UK

Funder: Wellcome Trust, UK

The main objective of the study was to find out whether community mobilisation by women's groups facilitated by FCHVs and strengthening of health management committees would enhance deliveries in health facilities or by trained health workers at home. Women's groups and health management committees were mobilized in 21 village development committees of Makwanpur district. Women's groups and health management committees were mobilized through community action cycle and appreciative inquiry approach respectively.

7. Study on building evidence to support equitable improvement in new-born and maternal health (EquiNam)

Study area: Makwanpur and Dhanusha

Study year: 2011 to 2014

Collaborator: University College of London (UCL), Institute of Child Health (ICH), UK

Funder: Economic and Social Research Council (ESRC), Netherland

The study was conducted to assess differences in morbidity and mortality seen among mothers and infants of different socioeconomic groups and to come out with appropriate strategies to bring out equitable improvement in new-born and maternal health.

8. Health and development outcome of mothers and children and their prevalence of risk factors for NCDs in Nepal

Study area: Makwanpur

Study year: 2013 to 2014

Collaborator: University College of London (UCL), Institute of Child Health (ICH), UK

Funder: Wellcome Trust, UK

The objective of this study was to assess the current health and development status of mothers and children approximately 10 years after exposure to WPGs during the perinatal postnatal period.

9. Impact of maternal disability on exclusion, birth outcomes and child health

Study area: Makwanpur

Study year: May to July, 2013



Collaborator: University College of London (UCL), Institute of Child Health (ICH), UK

Funder: Leonard Chesire and Inclusive Development Centre, UK

This study was done in 30 VDCs of Makwanpur district. A total of 13,683 women were interviewed. This study found out that 30% women had some sort of disability, but 6% had severe disability. While there was no significant difference between disabled and non-disabled women on antenatal visit, place of delivery and number of children, there was however high neonatal mortality among babies of severely disabled women.

10. Cluster Randomised Controlled Trial on the effects of participatory women's groups facilitated by local female community health volunteers on neonatal and maternal mortality

Study area: Dhanusha

Study year: 2005 to 2011

Collaborator: University College of London (UCL), Institute of Child Health (ICH), UK

Funder: Wellcome Trust, UK

This study was carried out in 60 VDCs (30 intervention and 30 control) of Dhanusha district. Women's groups facilitated by female community health volunteers (FCHVs) were mobilized in 30 intervention VDCs through community action cycle to improve perinatal and maternal health and infant nutrition.

11. Maternal and perinatal verbal autopsies and maternal and neonatal near miss case

Study area: Argakhanchi

Study year: 2010 to 2013

Collaborator: Health Right International

Funder: USAID

A total of 41 facility based perinatal verbal autopsies, 45 community based perinatal and neonatal verbal autopsies, 2 community based maternal verbal autopsies, 31 cases of obstetric near miss and 28 cases of neonatal near miss were studied in this study.

12. Operations research on maternal and neonatal care quality, utilization, knowledge and care seeking behaviour

Study area: Argakhanchi

Study year: 2010 to 2013

Collaborator: Health Right International

Funder: USAID



This was a quasi-experimental study conducted to explore the impact of integrating community and facility interventions and building linkages between the two, in addition to adding a maternal care focus to the community based neonatal care package. In this study, the mothers of children aged 0 to 23 months were selected by two stage cluster sampling design, A total of 140 mothers of children aged 0 to 23 months form the intensive intervention arm were enrolled in the study in both baseline and end line surveys. A total of 180 mothers in baseline and 200 mothers of children 0 to 23 months in the end line survey were selected from the control arm.

13. Cluster Randomized Controlled Trial involving 80 Village Development Committees (VDCs) of Dhanusa and Mahottari districts of Nepal – Low Birth Weight South-Asia Trial (LBW SAT)

Study area: Dhanusha and Mahottari

Study year: 2013 to 2015

Collaborator: University College of London (UCL), Institute of Child Health (ICH), UK

Funder: Save the Children, DFID, World Food Programme



This was a cluster Randomized Controlled trial conducted to

- evaluate the impact of a participatory intervention with women’s groups on low birth weight,
- evaluate the impact of inclusion of unconditional fortified food to pregnant women on low birth weight and
- evaluate the unconditional cash transfer to pregnant women in terms of birth weight

14. Impact of daily prenatal multiple micro-nutrient supplement versus iron and folic acid on children’s IQ at ten years of age: a follow up of cluster randomised trial

Study area: Dhanusha

Study year: 2015 to 2016

Collaborator: University College of London (UCL), Institute of Child Health (ICH), UK

Funder: Wellcome Trust, UK

15. Peer Ethnographic Study on Menstrual Health and Hygiene Management in Nepal

Study area: Khotang, Jhapa, Sindhupalchowk, Bhaktapur, Rautahat, Mahottari, Kapilbastu, Mugu, Rolpa, Dang, Baitadi and Achham

Study year: March to Aug, 2017

Funder: Population Services International (PSI), Nepal

The study was conducted to explore the beliefs and the sociocultural norms, practice and stigma that surrounds menstrual health and hygiene management; explore knowledge,

behavior, beliefs, self-perception of adolescent girls on MHM; find out the key influencers of adolescents on MHM practice and explore the barriers/ constraints and opportunities on accessing MHM products and services.

16. Family Planning Youth Consumer Journey

Study area: Parsa, Kaski, Illam, Dang and Kathmandu

Study year: August to December 2017

Funder: Population Services International (PSI), Nepal

This was a qualitative study conducted to identify youth's (15 to 24 years) knowledge, insights, preferences and constraints in accessing family planning products and services.

17. The association of migration for labour on left behind child nutritional status and growth

Study area: Dhanusha

Study year: April 2018 to January 2019

Collaborator: University College of London (UCL), Institute of Child Health (ICH), UK

Funder: Wellcome Trust, UK

18. Antenatal care in three hospitals of Nepal: Assessment of the current landscape and developing priorities for action to improve care- Phase 1



Study area: Kathmandu and Makwanpur

Study year: Nov 2018 to 2019

Collaborator: University of Bristol, UK

Funder: Global Challenges Research Fund (GCRF), UK

The phase 1 study was a mixed method study conducted to assess the mothers, staff and stakeholders views on antenatal care in Nepal and identify priority areas for action.

The data collection methods used were service evaluation audit, interview with mothers, focused group discussion with mothers and staff and in-depth interview with maternal health stakeholders.

19. Understanding the factors contributing to maternal mortality in selected provinces of Nepal

Study area: Parsa, Sarlahi, Banke, Rolpa, Surkhet and Kalikot

Study year: Nov 2018 to June 2020

Funder: South Asia Research Hub, DFID, India

The objective of this study was to identify the social, behavioural and health system factors contributing to the three delays and maternal mortality in Nepal. This was a mixed method study adopting four approaches: Social Autopsy, Maternal Near Miss Analysis, Policy Landscaping Review and Key Informants Interviews.



20. Studies by Nepal Injury Research Centre

Study area: Makwanpur

Study year: 2018 to 2021

Collaborator: University of the West of England, UK

Following studies were done:

- **Community level estimates of death due to injuries in rural areas of Makwanpur district, Nepal:** This project was conducted to establish a model to identify deaths secondary to injuries occurring outside hospitals. Data were collected prospectively in two rural municipalities.

Female Community Health Volunteers notified all deaths in their area to the local Health-Post. Trained data collectors identified the injury-related deaths and invited relatives of the deceased to take part in a structured face-to-face interview.

- **Study of home and workplace injuries in Makwanpur district, Nepal: A household survey:** This was a community-based household survey which was conducted with the aim of gaining a better understanding of injuries that take place either in the home and/or in the workplace. This study described the epidemiology of all injuries including the causes and risk factors associated with those injuries.
- **Surveillance of hospital attended injuries in Makwanpur district of Nepal: A feasibility study:** This objective of this study was to evaluate the feasibility of a model of hospital based injury surveillance tool in two hospitals. We collected prospective data to describe the patterns and epidemiology of hospital injury presentations and associated risk factors in this population. Data analysis were undertaken to explore the epidemiology of injuries presenting to these hospitals, identify population groups at risk of different types of injuries and the risk factors associated with sustaining an injury.

21. Nepal Growth Monitoring and Promotion (GMP) Case Study

Study area: Sindupalchowk, Jajarkot, Kailali and Kathmandu

Study year: August 2020 to September 2021

Collaborator: JSI/USAID Advancing Nutrition, Arlington, USA

Funder: USAID, USA

This case study used a multiple case design to examine GMP implementation in two different country contexts (Nepal and Ghana). The study activities include a desk review of policies, program reports and peer reviewed literatures to understand implementation of GMP; interview with national and sub-national (provincial), district, and local level stakeholders, health workers, FCHVs, mothers and caretakers; observation of GMP sessions at health facilities and outreach clinics.



22. Improving the quality of Antenatal Care in Nepal through prioritization and co-design of interventions: Phase 2 of the Nepal Antenatal Care Network



Study area: Makwanpur

Study year: Jan 2021 to December 2021

Collaborator: University of Bristol, UK

Funder: Quality Related Global Challenges Research Fund (QRGCRF), UK

The phase 2 study used a Participatory Action Research method for designing women centric interventions. Discussions were done with 5 women's group with the involvement of local health workers. Women

prioritized the problems related to antenatal care in their communities using Participatory Action Cycle. Then, they developed interventions. We then assessed the feasibility of women developed intervention in the health facilities.

23. Exit Client Survey: Client's satisfaction among women of reproductive age receiving family planning services in Nepal

Study area: Jhapa, Morang, Sunsari, Udayapur, Chitwan, Makwanpur, Sindhuli, Kavre, Kathmandu, Lalitpur, Rupandehi, Kapilvastu, Dang, Bardiya, Kailali and Kanchanpur

Study year: July 2021 to November 2021

Funder: Population Services International (PSI), Nepal



This study was conducted to measure the client's perception of quality and satisfaction of family planning services they received from Health Posts and private OK Networks health facilities. This was a quantitative, cross-sectional study conducted in 58 private OK network health facilities and 30 public health facilities (Health Posts) of 15 WHP implemented districts of four Provinces of Nepal. In this study, face to face interview was conducted with women aged 18 to 49 years who were exiting from the private and public health facilities after receiving temporary family planning services by using a standardized exit client interview questionnaire in mobile

based Survey CTO application. A total of 505 exit clients from private OK network health facilities and 120 exit clients from public health facilities of Bagmati Province were interviewed.

24. Determination of feasibility and acceptability of New-born screening in Nepal: A pilot Study

Study area: Paropakar Maternity and Women's Hospital (Prasuti Griha), Thapathali, Kathmandu

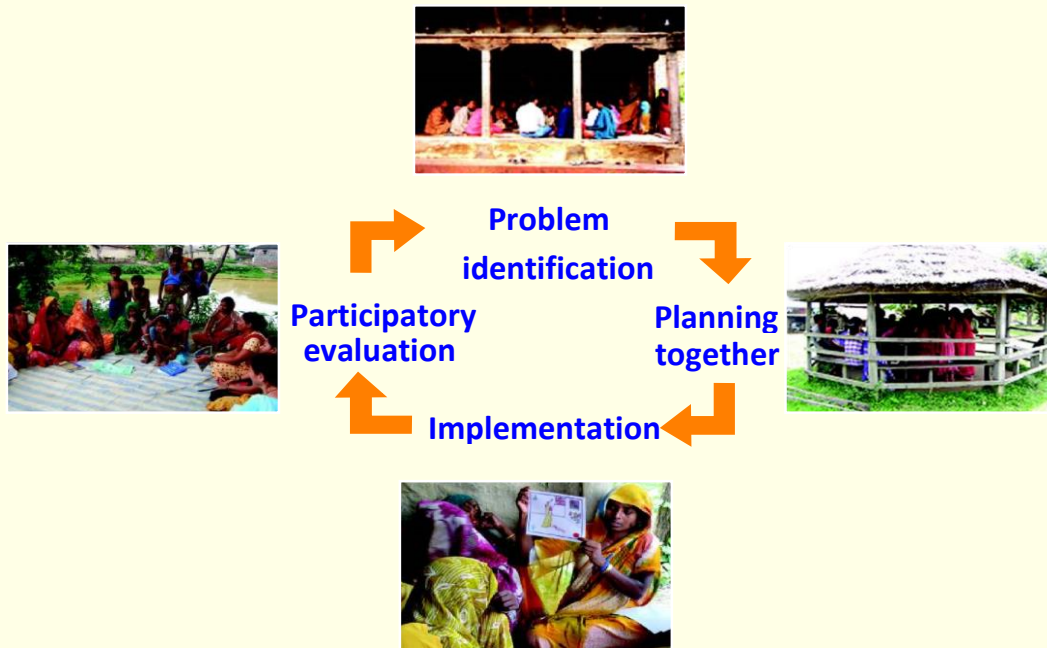
Collaborator: North Western University, Institute for Global Health, USA

Status: Ongoing



II. Training

The participatory action cycle



Since 1997, MIRA has shared its knowledge about maternal and neonatal health to various cadres of health workers in Nepal through various training programs. MIRA has conducted several capacity enhancement trainings related to research methodologies, Participatory Action Cycle, Participatory Learning Action (PLA), Appreciative Inquiry, Essential New-born Care (ENC), etc. Some of the trainings conducted by MIRA are listed below:

1. Essential New-born Care training

- ENC training was carried out in 10 district hospitals in collaboration with National Safer Mother hood Project;
- ENC training was carried out in collaboration with PLAN and CARE Nepal;
- ENC training was carried out in collaboration with Merlin in Salyan district;



- ENC training was given to all the health facility staff and community health volunteers in Makwanpur and Dhanusha districts of Nepal.
2. **Participatory Learning Action (PLA) training** was provided to the staff of following organizations:
 - Bayalpata Hospital, Achham
 - Education Training and Services for Community- (ETSC Nepal), Hetauda, Makwanpur
 - Kadoorie Organization, Pokhara, Kaski
 - UMN Central Office, Kathmandu
 - UMN Field Team, Itahari, Sunsari
 - UMN Field Team, Butwal, Rupandehi
 - UMN Field Team, Hetauda, Makwanpur
 - Rural Women Service Centre, Makwanpur
 - AMDA MINDS, Rupandehi
 - AMDA MINDS, Nawalparasi
 3. **Appreciative Inquiry training** was provided to the staff of following organizations
 - Rural Women Service Centre, Makwanpur
 - Education Training and Services for Community- (ETSC Nepal), Hetauda, Makwanpur
 - Janachikitsalaya, Nhyokha, Kathmandu
 - Health Facility Management Committees of 22 health facilities of Makwanpur district
 - Paropakar Maternity and Women's Hospital, Kathmandu
 - Child Watabaran Centre Nepal
 - Rastriya Banijya Bank
 - Civil Aviation Authority of Nepal
 4. **Training on Maternal and Perinatal Verbal Autopsy**
 - Trainings on ENC, Maternal and Perinatal Verbal Autopsy was carried out in collaboration with Health Rights International in 2012, 2013;
 - Training on Maternal Verbal Autopsy was provided to staff of Narayani Hospital, Birgunj; Province Hospital, Surkhet and Bheri Hospital, Banke on 2019.
 5. **Training on Breast-feeding** was provided at:
 - Paropakar Maternity and Women's Hospital (Prasuti Griha)



- Kathmandu Medical College
 - Nepal Medical College
 - Patan Hospital
 - TU Teaching Hospital
 - Janachikitsalaya
6. **Neonatal Advance Life Support training** was provided to staff of:
- Paropakar Maternity and Women’s Hospital (Prasuti Griha)
 - Kathmandu Medical College
 - TU Teaching Hospital
7. Trainings on emergency obstetric care was provided to health facilities in Makwanpur district

Development of Perinatal Training Resource Centre

MIRA established a Perinatal Training Resource Centre in 2002 with support from Women and Children First, an NGO in the UK. MIRA in collaboration with the National Health Training Centre (NHRC) developed training materials on new-born care for different cadres of health workers in Nepal.



III. Advocacy

MIRA is actively involved in translating the knowledge from research into policy. Members of MIRA has been involved as core members of the government committees. Some of the major contributions of MIRA are listed below:

- An international workshop on workshop on “Improving Health of the New-born Infants in Developing Countries” was held in Kathmandu in April 1997 where leading perinatologists

and neonatologists from SAARC region and abroad participated. Later, the proceedings of the conference was published in a book.

- Some of the members of MIRS were previously involved in development of Safe Motherhood and New-born Care policy and plan of the Government of Nepal.
- Similarly, some of the members of MIRA contributed significantly in the development of Government's National Neonatal Health Strategy 2004.
- Members of MIRA were also involved in the formulation of Community Based Newborn Care Programme of the Ministry of Health and Population of the Government of Nepal.

Besides above, the members of MIRA played a very significant role in the establishment of Perinatal Society of Nepal (PESON) in 1997. Since then, MIRA has been co-hosting pre and post conference workshops during the conferences of PESON.

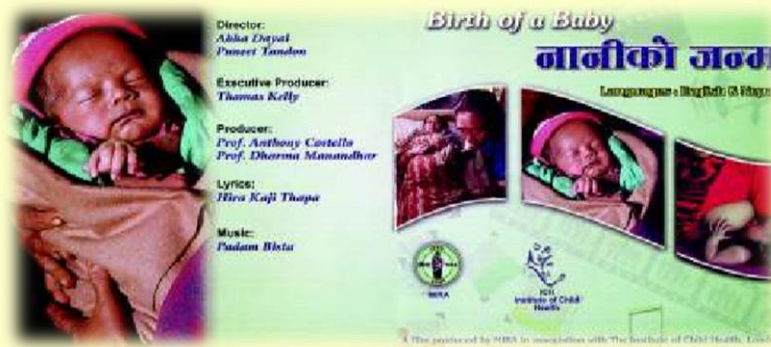


IV. Publications

In line with the objective of providing resource materials on perinatal health, MIRA has made several films and publications including books, chapters in the books and articles in national and international journals. A brief overview of publications is highlighted below:

1. Films

Films on “Birth of a baby”, “Community Mobilisation and Nutrition Education” were produced by MIRA and screened in different communities to bring awareness and behaviour change.



2. Research articles

Over the past 28 years, MIRA has published more than 150 articles in different national and international journals. Some of the past publications of MIRA can be accessed from http://www.mira.org.np/mira/index.php?option=com_docman&task=cat_view&gid=35&Itemid=62.

3. Books

Improving Newborn Infant Health in Developing Countries.

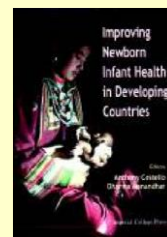
Essential Neonatal Care 1996, Dr. Dharma S. Manandhar, published by Nepal Pediatric Society

Navajatshishuko Syahar (Nepali), Dr. Dharma S. Manandhar

Navajatshishuko Aadharbhut Shyahar (Nepali), Dr. Dharma S. Manandhar

Pictorial book on newborn care

Perinatal Game Card for use by Participatory Women's groups



C. ORGANIZATION CAPACITY STATEMENT

Human Resources

Founded and led by experts in clinical and public health researches, MIRA has a diversified working team. All the current team members of MIRA are well experienced in maternal and child health sector and have 5 to 30 years of working experience. Similarly, MIRA has strong link and extensive networks with professionals of diversified disciplines and can effectively delivery tasks for the projects effectively.

Equipment/ facilities/ office

The head office of MIRA is located in Kathmandu and has a field office in Hetauda, Makwanpur. MIRA is well equipped with modern equipment and technologies like high speed internet, heavy duty printers, heavy duty photocopy machines, scanners, LCD projectors, audio recorders, fax, computers and laptops.





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