



# MYRIAM DE LOENZIEN

Ph.D.

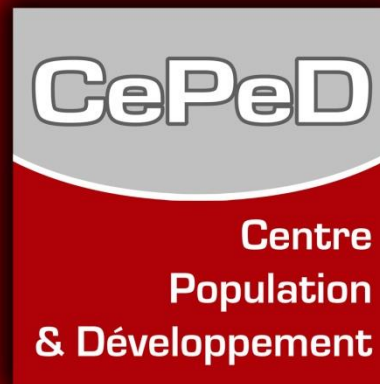
*University of Paris Descartes*

*France*

VIETNAM - FRANCE - ASIA - PACIFIC  
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# Inequalities in cesarean section delivery in Vietnam: a population-based perspective

Myriam de Loenzien IRD-CEPED



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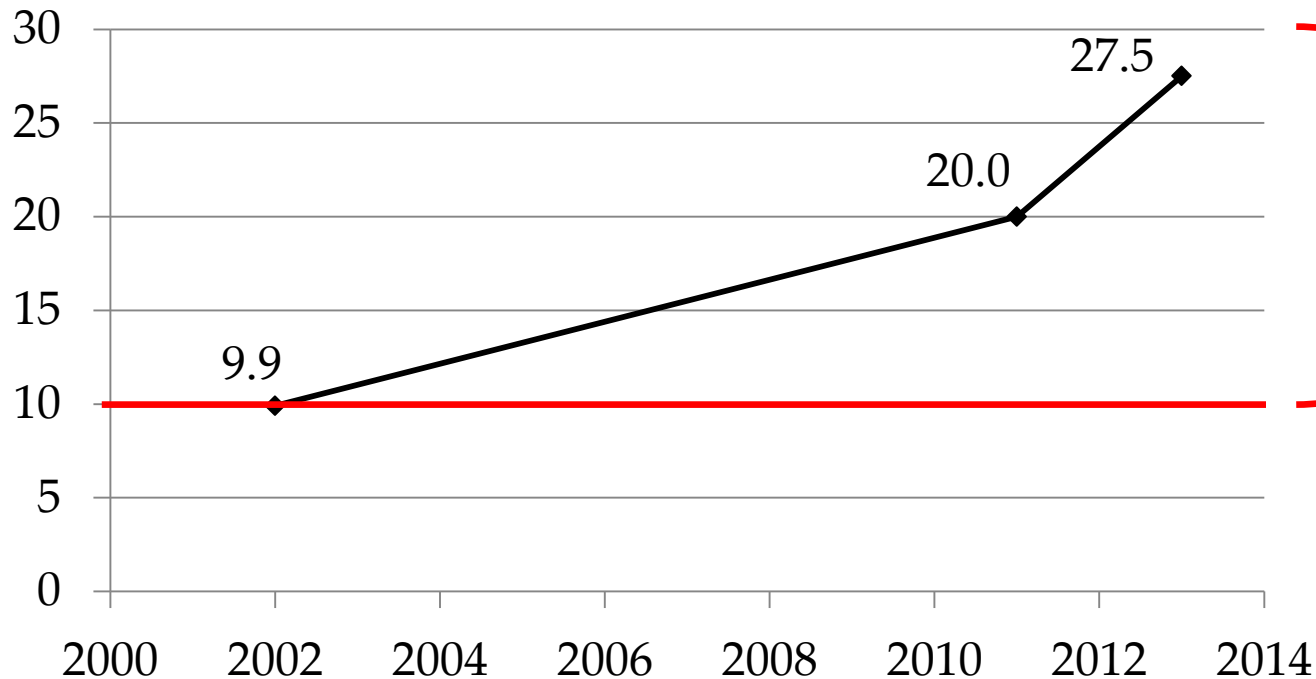
# Overview

- › A public health concern
- › Objectives
- › What do we know about inequalities in caesarean section (CS)?
- › Analysis of data from national survey (MICS 2013-14)
  
- › Geographic profile
- › Main correlates of caesarean section
- › Discussion: inequality, health and CS
  
- › Conclusion and perspectives



# A public health concern

Proportion of births delivered by CS  
per year (%) (DHS 2002, MICS 2011, 2013-14)



- No reduction in maternal and newborn mortality rates
  - Potential negative consequences for maternal and infant health
  - Risks for future pregnancies
  - Costly
- (WHO 2014, Lumbiganon et al. 2010)

- › Rapid increase, high level
- › 94.3% deliveries in medical infrastructures
- › At home: 8.4% deliveries with skilled medical assistance
- › 89.4% ANC with assistance of doctor

# Objectives



To what extent do  
sociocultural and economic **inequalities**  
contribute to discrepancies  
in **caesarean section** delivery rates?

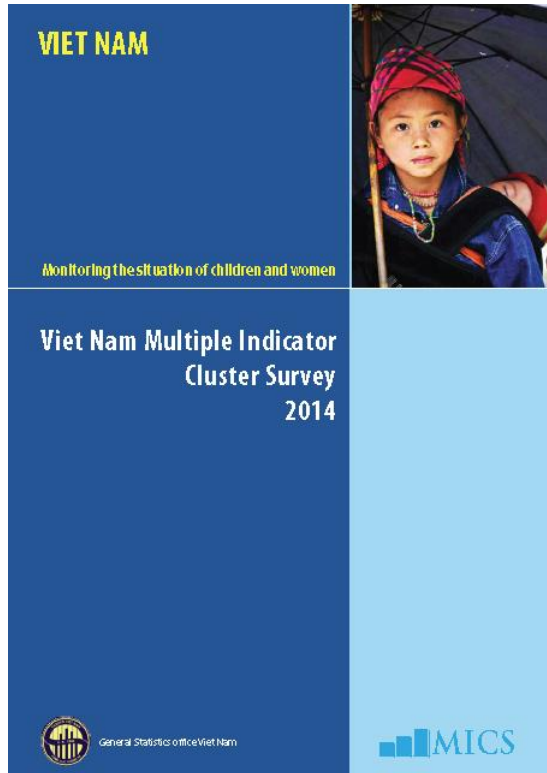
# Potential sources of inequalities



Clinical but also institutional, sociocultural, demographic, economic and community factors

- › **Access** to antenatal services (Irani, 2015; Kottwitz, 2014) in Vietnam (Leone et al., 2008)
- › Higher **economic** background in Southern Asia, SS Africa (Cavallaro et al. 2013) and Vietnam (Leone et al., 2008)
- › **Urban** in Southern Asia and SS Africa (Cavallaro et al. 2013)
- › **Organization** of health infrastructure (Brugeilles 2014)
- › **Gender** and **body** norms (Brugeilles, 2014)
- › Benefits from **social protection** system (Lo 2003)
- › **Auspicious days** in the Chinese lunar calendar (Lo, 2003), **lucky hour** birth in Vietnam (Baravilala UN cited by Thanh Nien, 2013)
- › Less **interactions** with friends and family (Leone et al., 2008)
- › **Son preference** cf. Quang Ninh province (Dinh et al., 2012) (Guilmoto, 2012)

# Analysis of national survey data



## Population

- Representative sample for country, areas and regions
- 1464 women aged 15-49, at least one live birth in last 2 years
- 1477 (last) births from these women

## Variables

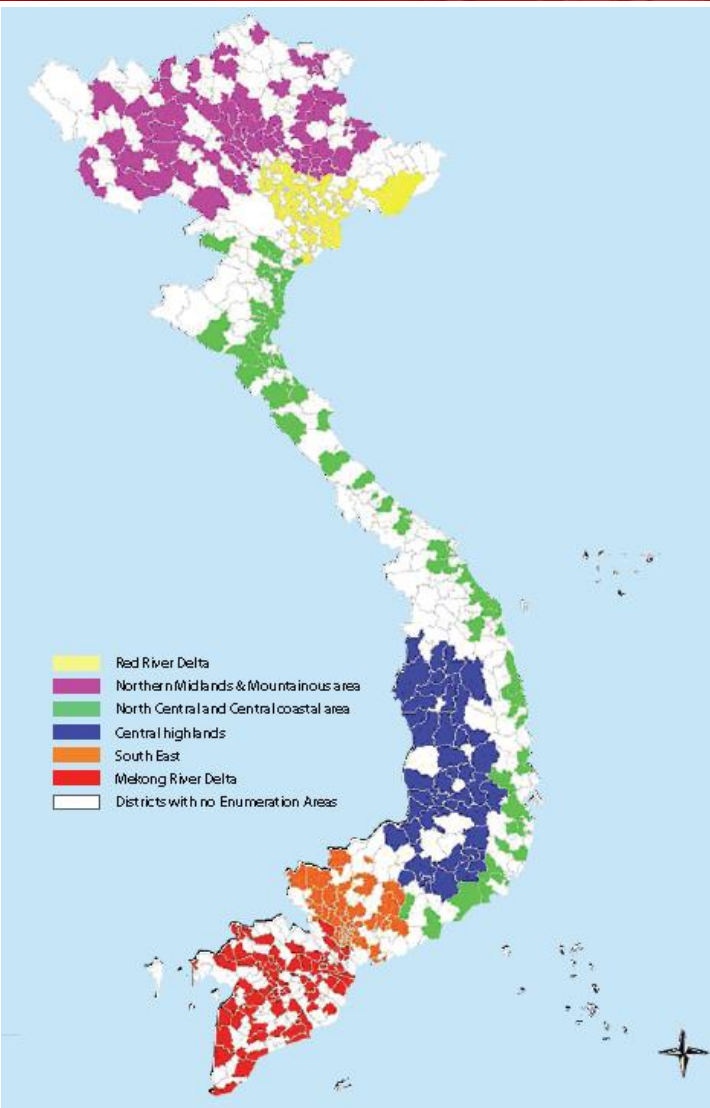
- Type of health facility: private, public, home
- Antenatal care: visits, assistance
- Newborn: sex, twinship
- Women: age, education, parity
- Household: wealth, education, ethnicity, relationship
- Geography: area, region

## Analyses

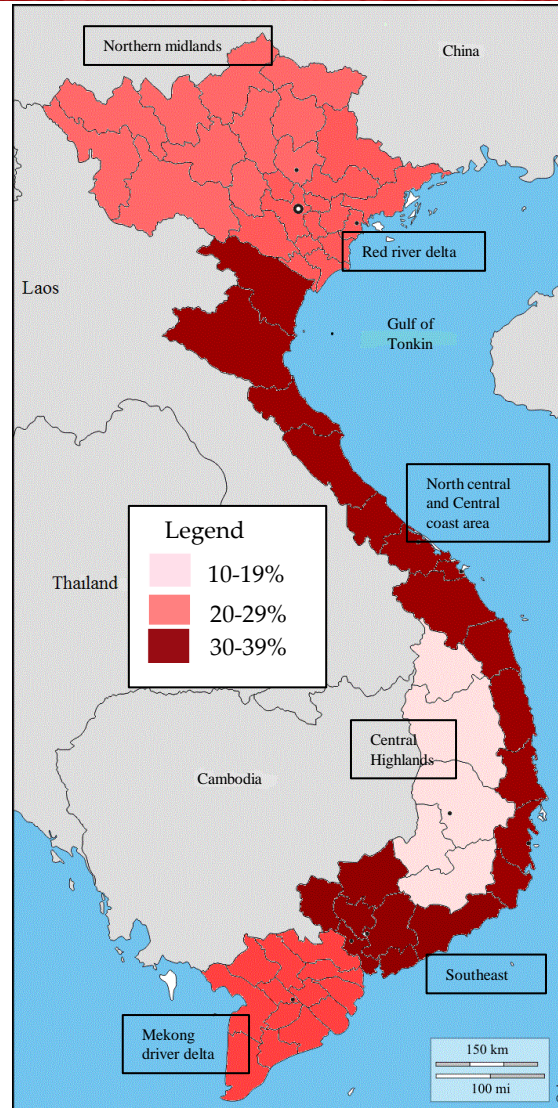
- 2 rates: CS and CS decided BOL
- Identify relevant characteristics
- Include them in logistic regression model (Odds ratios)
- Usual level of risk ( $p < 0.05$ )



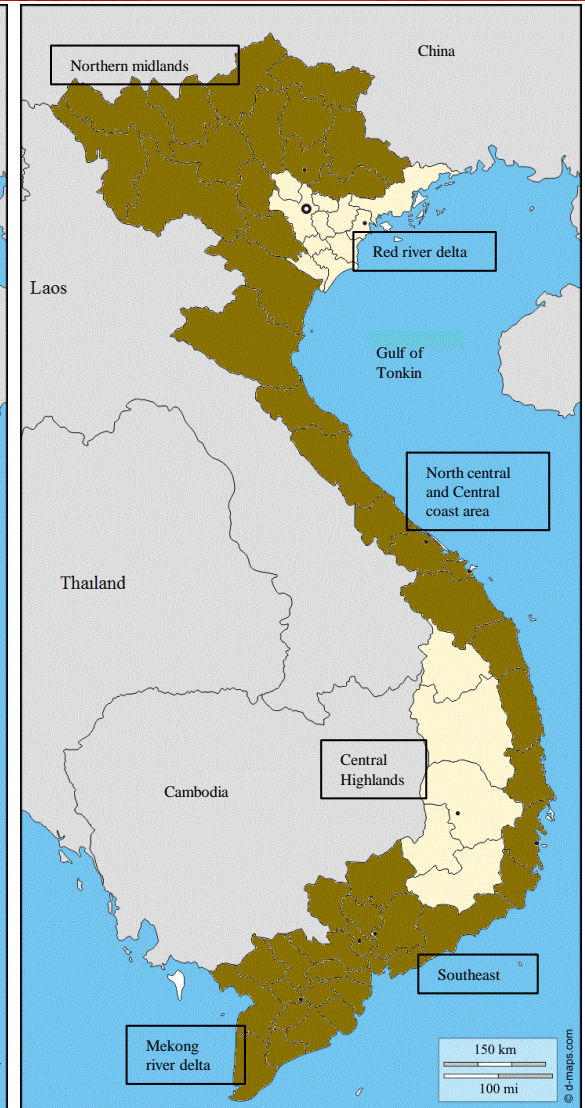
# Geographic profile



Sample



CS rates  
Overall: **27.5%**



Adjusted odds ratios



# Main correlates of caesarean section

Higher CS rate for:	Odds ratios
Delivery in the <b>private</b> sector / public	-
Antenatal care with <b>doctor</b> assistance / no dr.	-
<b>Nulliparous</b> / multiparous	1.3
Aged <b>over 35</b> / 20-34	2.3
Education <b>upper 2ry, 3ry</b> / 1ry or less	1.7, 1.6
<b>Urban</b> area / rural	2.0
Red River D., Centr. Highl. / <b>North Centr. &amp; South</b>	0.6, 0.5
<b>Richest</b> household / middle	-
Minority ethnic group / <b>Kinh</b>	0.6



- Overall: **27.5%**
- Nulliparous women: **30.6%**
- No difference linked to sex of newborn
- Little number of twins (0.8%)

# Main correlates of deciding CS before onset of labour



Higher rate for:	Odds ratios
Nulliparous / <b>multiparous</b>	0.2
<b>Urban</b> area / rural	-
<b>Rich</b> household / middle	2.3
Education of <b>HHH 3ry, upper 2ry/ 1ry</b> or less	-

Overall: **51.5%** of CS deliveries

NB CD decided BOL include elective and emergency medically indicated CS

# Discussion: inequalities, health and CS delivery

High improvements but **rising inequalities** in health

- › Especially antenatal care and skilled birth attendance (Axelson et al. 2012)
- › Social determinants of health: influence of gender relations (Bui et al. 2012)

**Access to CS** : all rates  $\geq 10\%$

- › CS performed only in district and tertiary hospitals (Dinh et al., 2012), disparity in ANC adequacy in **rural** and urban areas (Tran et al. 2012), heterogeneity of costs
- › Similar to structural determinants of ANC and skilled birth attendance in MICS 2006 although **ethnicity** over and above wealth and education (Goland et al. 2012)
- › Ethnicity partly explained by ANC attendance and delivery at home (Malqvist et al. 2011)

2 contrasted **target populations**:

- › CS: Nulliparous urban women
- › CS BOL: Multiparous women in rich households



# Conclusion and perspectives

## Preliminary results

- › Influence of socioeconomic situation confirmed

## Study to be complemented with:

- › **Clinical-obstetric** characteristics and birth history (Robson classification) (Triunfo 2015)
- › **Access** to health infrastructures
- › **Attitudes** and beliefs: influence of auspicious time, preference for son, gender norms
- › Public health **policy**: hospital autonomization (London 2013)
- › Influence of the **family** (Craig 2002)

## Comparisons with:

- › Southeast asian countries: Cambodia (DHS)
- › Europe: France







**Thank you for your attention**