

Do Microcredit and Family Planning Programs have their intended impact on poor households?

Evidence from a Field Experiment in Ethiopia

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Placing Microcredit & Family Planning in context

- **Central challenges of life**

- Surviving & doing things we value/desire
- Both require abilities & resources
 - Abilities are reasonable stable, resource availability isn't

- **Variation (part & parcel of life)**

- Expected variation – life stages (marriage/cohabitation, childbirth, death in old age), relocation
- Unexpected variation – natural disaster, illness/injury, theft/burglary, lottery, communal violence, “unwanted pregnancy, etc

- **Managing Variation**

- By constructing lives to insure against variation – type of work, expenditures, social relations, borrow, insurance
- **Some variation is manageable, some is not – depends on ability, resources, social & economic environment**

- Microcredit & Family Planning services are instruments for managing variation

How microcredit fits into poor people's life

- Those who have limited incomes (i.e. incomes close to essential expenditures)have limited ability to save which limits
 - ability to use savings to cope with economic shocks
 - ability to accumulate assets – to sell-to cope & to offer as collateral for borrowing
 - hence shut out of formal credit markets (banks) which have fairly strict requirements on lending
 - Recourse: borrowing from informal moneylenders who may give them loans but in taking more risk ask for higher interest
 - Deal with Limited/expensive credit by structuring lives to be lower risk, which could mean less income (& the cycle)
- Microcredit offers possibility of borrowing with limited/no collateral – via peer selection, peer monitoring, incentives, etc.
 - Benefit – better management of variation

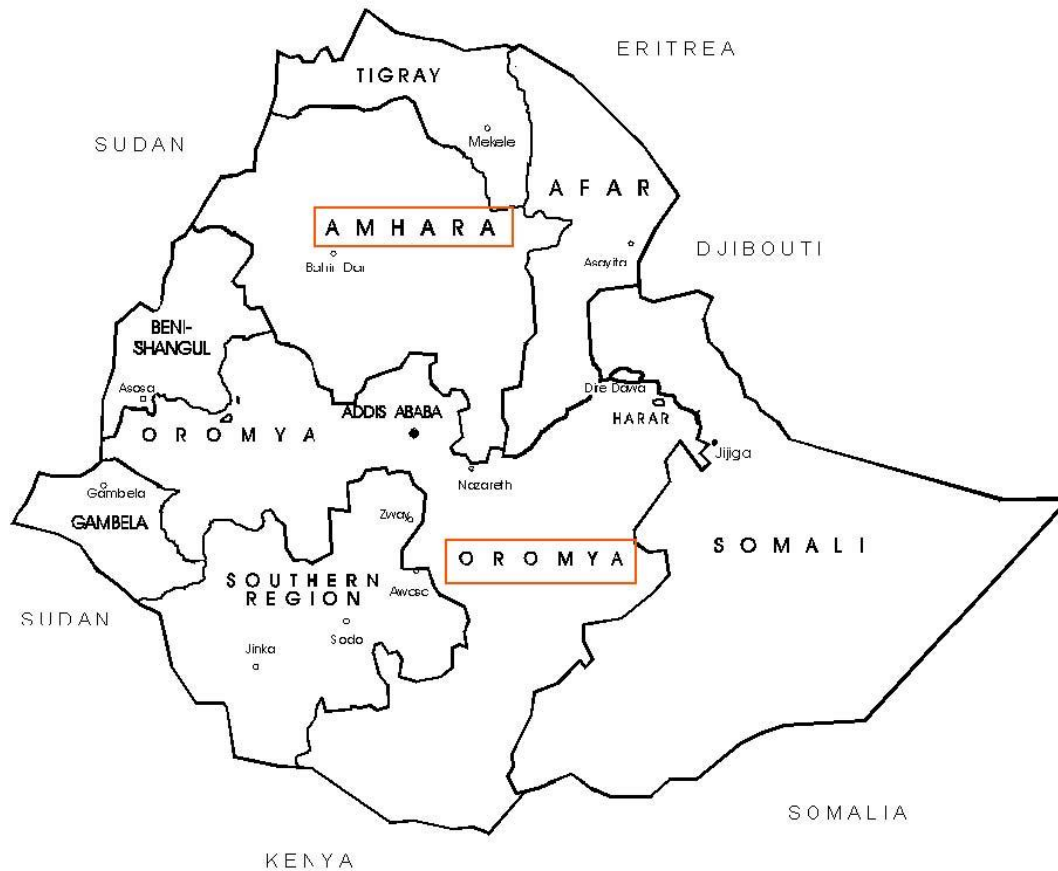
How family planning fits into people's lives

- Sex is central to people's lives – a basic biological impulse
 - the essential mechanism in the selfish gene's game plan
- Sex has consequences
 - Pleasure & Pregnancy (and STI)
 - Wanted or Not wanted (at the time of sex)
 - Either way...unless terminated leads to childbirth
- Consequences of child birth
 - Health of the mother & child COSTS
 - Additional resources – to feed, clothe, raise (incl. Schooling) COSTS
 - But if successfully raised to adulthood...additional source of labour & income & support BENEFITS
- Contraception (Family Planning) offers a mechanism for weakening the link between sex & childbirth consequences – better management of unwanted variation
- Could be more relevant for poor because scope for managing variation is limited

Study Context

- David & Lucille Packard Foundation funding of programs in Ethiopia (in 2002)
- Grants to organizations in Amhara & Oromia regions to provide...
 - Microcredit - ACSI (Amhara) & OCSSCO (Oromiya)
 - Typical micro-credit: group responsibility, no collateral, high repayment
 - Family planning – ADA (Amhara) & ODA (Oromiya)
 - Community based distribution (CBD) – community health workers providing info and pills and condoms and referrals
- Contracted Family Health International to evaluate the potential benefit of linking the two programs – for FP

Study regions in Ethiopia



Study Questions

Packard Foundation's primary interest:

Does linking of credit and family planning programs have a larger impact (on contraceptive use) than either program operating on its own?

- So measure impact of linking FP & Credit by comparing outcomes in places with linked programs with outcomes in places with unlinked programs (really FP) and all of these intervention groups with a control group with neither
 - Intervention => Packard-funded intervention (could have other programs)

Study design permits exploring impact of microcredit on borrowing and household economic functioning BUT this was not the focus of the study

Study Design (1)

- Cluster Randomized Control Trial
- Randomize *kebeles* or Peasant Associations (lowest administrative division) where Packard grantees were intending to start their programs to one of 4 groups
 - Credit & Family Planning
 - Only Family Planning
 - Only Credit
 - No program
- Baseline (pre-intervention) household survey – 2003
- Follow up household survey – 2006
 - Same villages, but not same households (due to ethical review)

Study Design (2)

- Pre-survey Focus Group Discussions in both regions to...
 - understand social configuration of study areas, in particular male & female preferences, decision-making, etc.
 - assist in design of household survey instrument
- Household surveys - 6400 eligible households, ~800 in each arm in each region) to measure demographic & economic behaviour – combination of LSMS & DHS surveys
- Monthly service statistics collected from intervention arms
- End line program checking – to determine deviation from protocol

Study findings

- Impact of programs on contraceptive use & fertility
 - A final report to the Packard Foundation (2007) focused entirely on questions of interest to them
 - Impact of linking microcredit & FP (as done by the relevant organizations – on contraceptive use & fertility
 - Impact of FP & Credit on their own on contraceptive use & fertility
 - Journal publication: Desai, J. and A. Tarozzi (2011). "Microcredit, Family Planning Programs, and Contraceptive Behavior: Evidence From a Field Experiment in Ethiopia." Demography.
- Impact of microcredit on borrowing & household economic functioning
 - Journal publication: Tarozzi, A., J. Desai, et al. (2015). "The impacts of microcredit: Evidence from Ethiopia." American Economic Journal: Applied Economics **7(1): 54-89**.
- Today's presentation: Summarize findings of the study & papers in simple terms

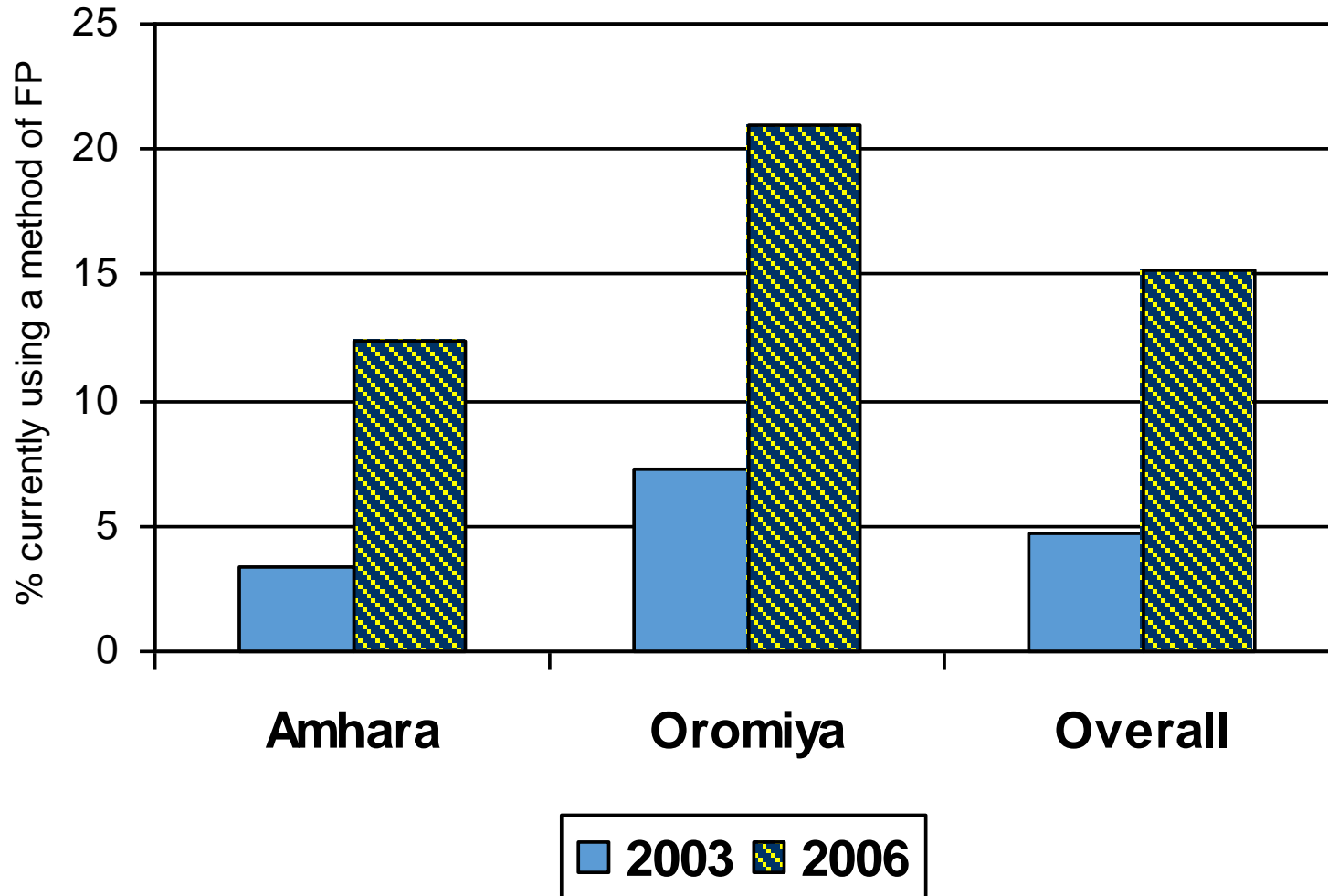
Findings

- Impact of Family Planning programs
 - Overall changes – from 2003 to 2006
 - Impact of Packard-Funded FP
 - Linked FP & Credit (form of linking: Credit officers provide information on FP) – relative to FP alone
 - FP & Credit on their own
- Impact of Microcredit programs
 - Overall changes – from 2003 to 2006
 - Impact of Packard-Funded Credit

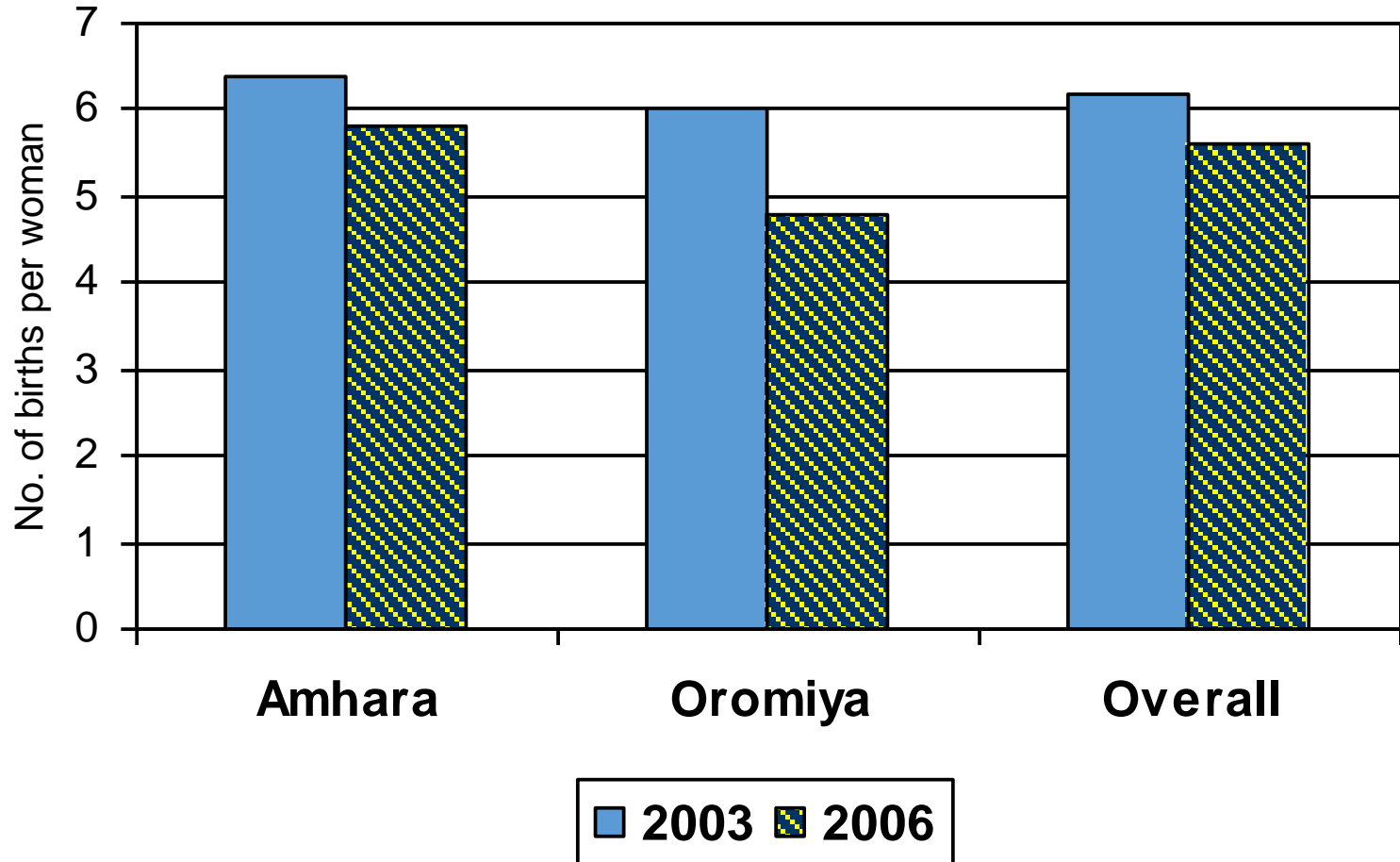
Findings (for FP)

Overall Picture

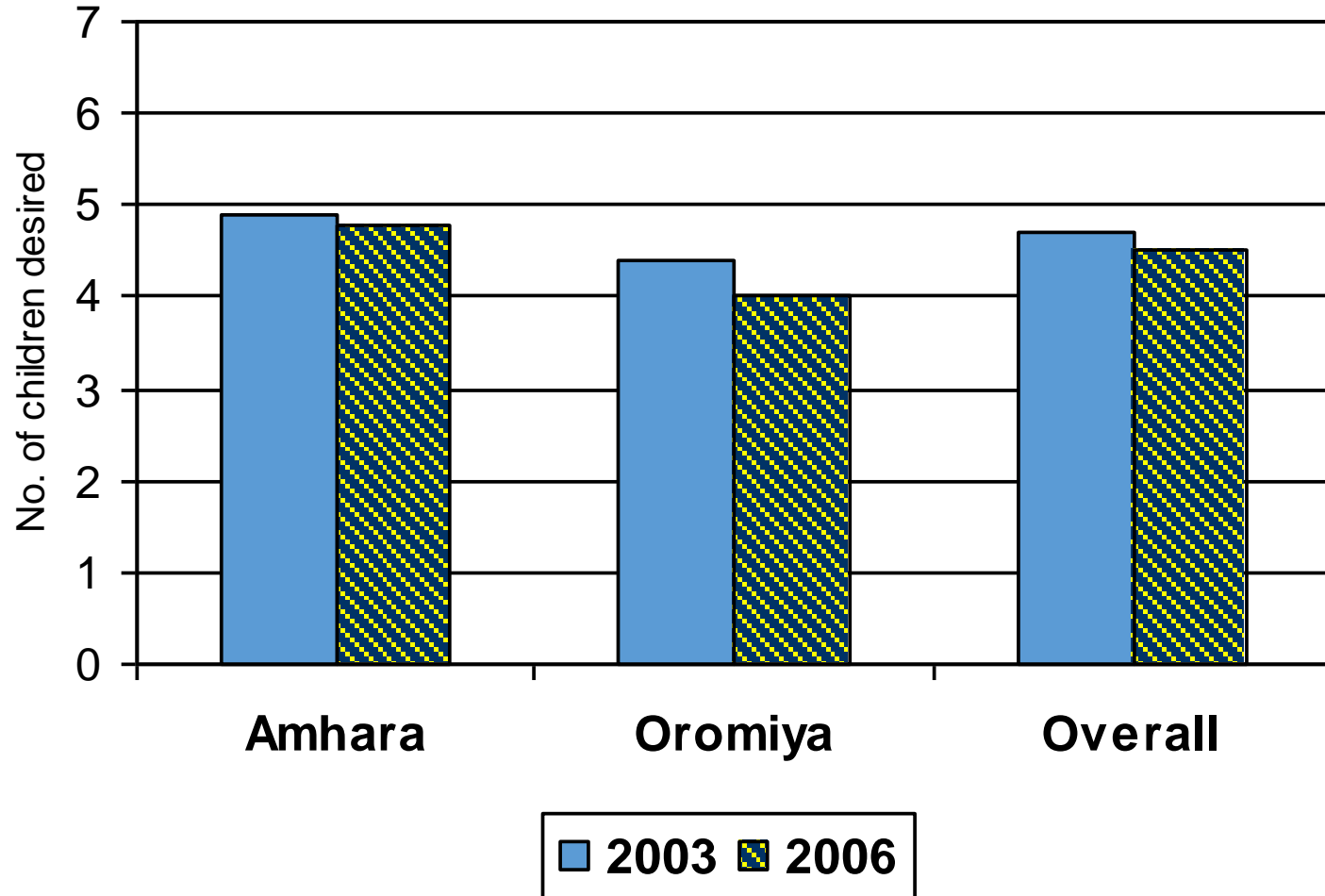
Current use of contraception



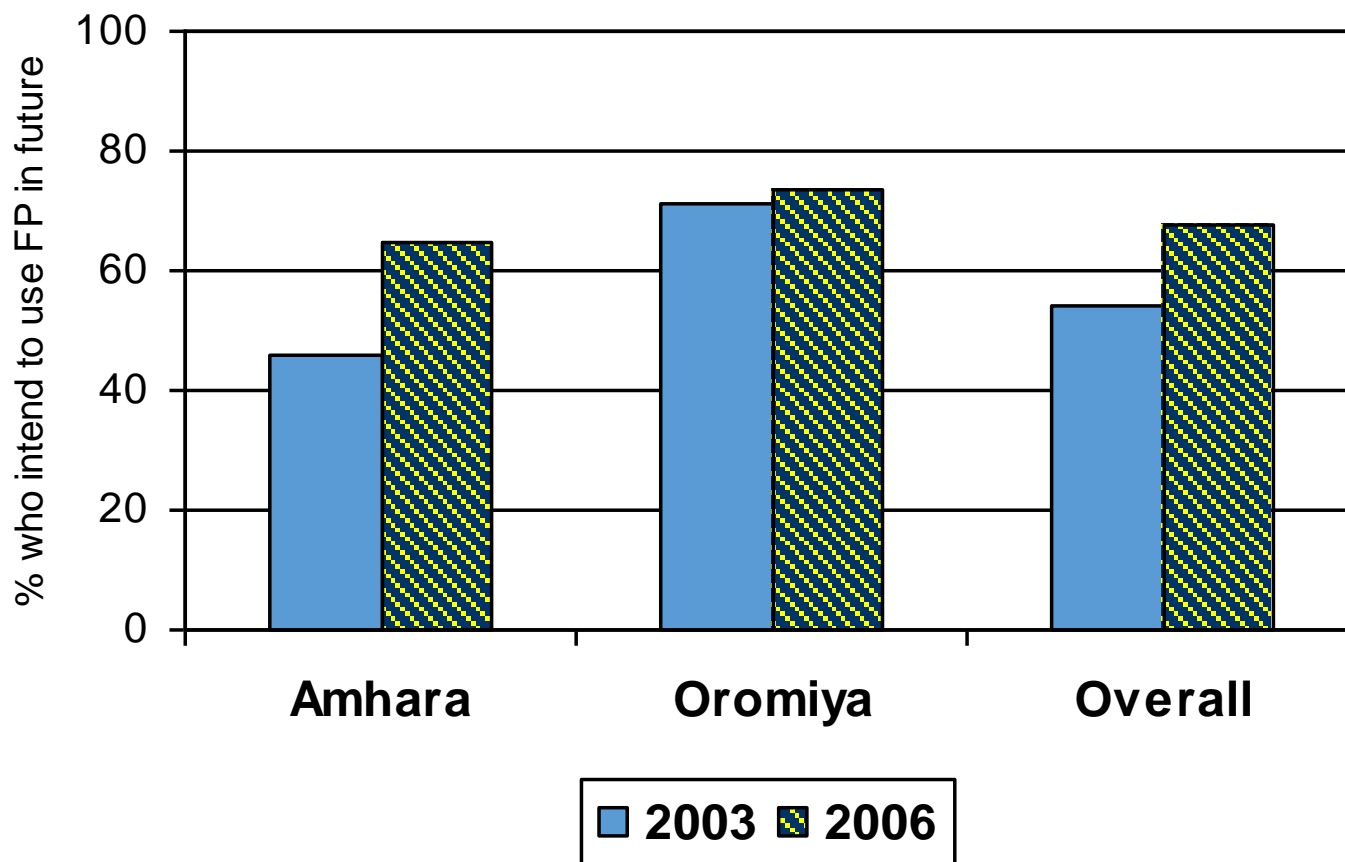
Total Fertility Rate



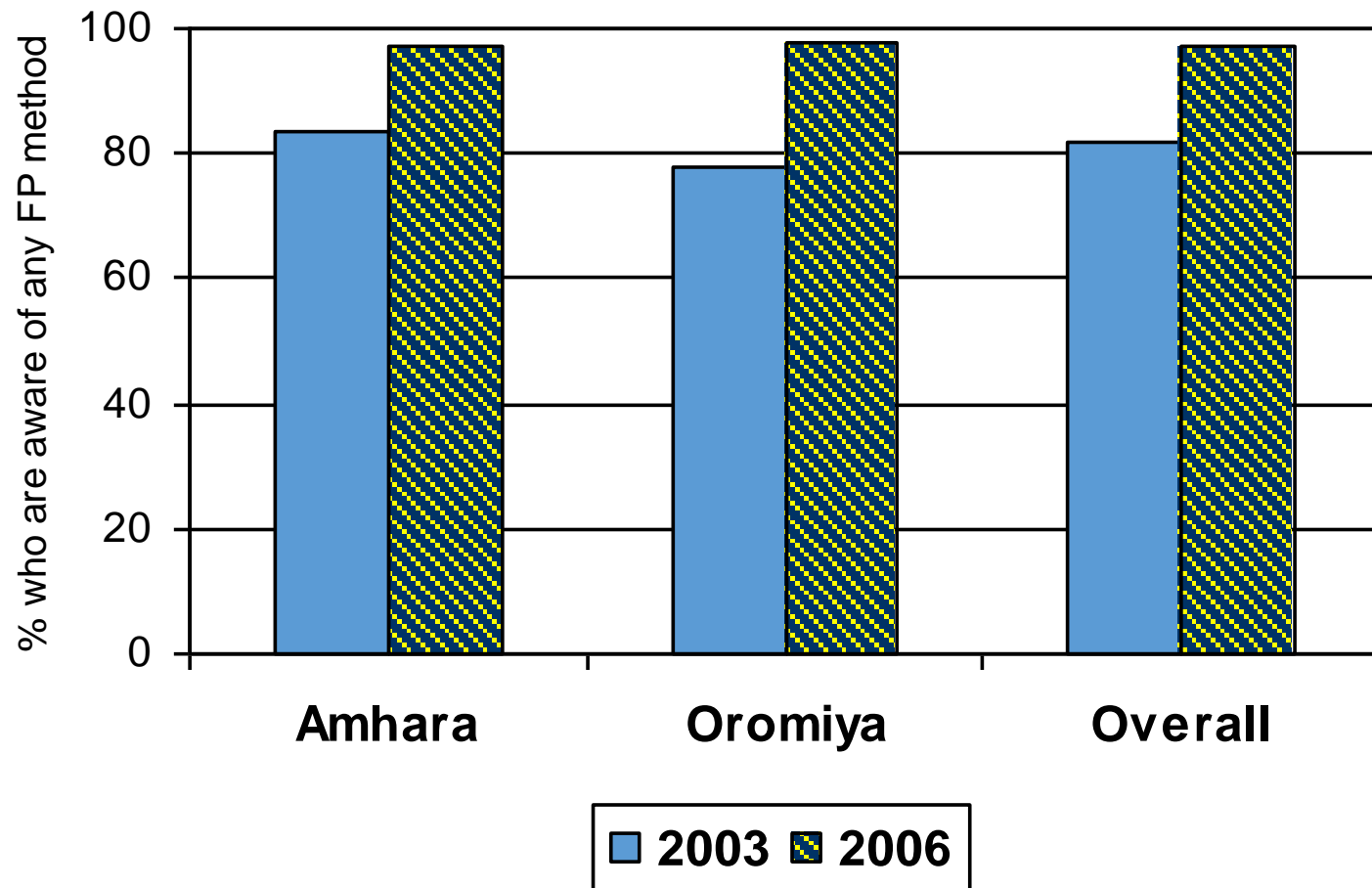
Desired Family Size



Intention to use contraception in future (of those not currently using)



Awareness of any FP method



Findings

Impact of Interventions

Deviation from study protocol

- Initial lists provided by organizations were faulty: 8 PAs had existing programs
- Study protocol followed in 72% of PAs
- Consequence: Program exposure no longer random
 - Solution: Use Instrumental variables regression (2SLS) by instrumenting “actual” intervention group using “assigned” group (exogenous) as instruments
- Alternatively Ignore deviation and still do “intent to treat” analysis using assigned groups (typical approach in biostatistics)

Randomization Tests

Select results for Amhara

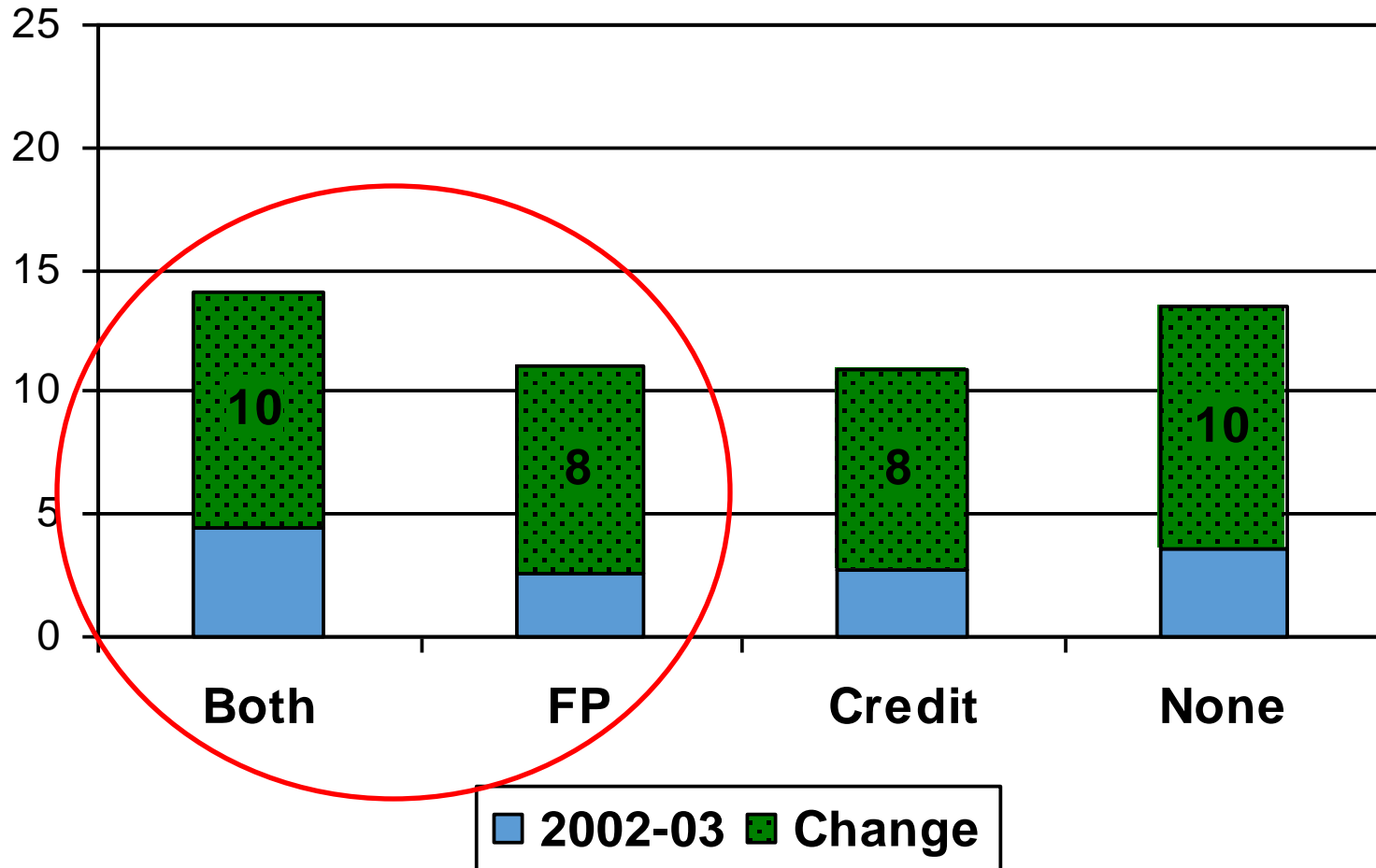
	Both	Credit	FP	None	p-value
<i>All women 15-49 years of age</i>					
Currently using contraception (%)	4.5	2.6	2.8	3.6	0.72
Intend to use FP in the future	46.1	48.9	41.0	50.0	0.02
Know of any method of FP (%)	86.5	88.3	77.7	82.6	0.36
Have heard of pills/injectibles (%)	60.6	60.3	52.6	59.3	0.71
No. of births in past 3 years (mean)	0.53	0.51	0.51	0.46	0.45
Desired number of children (mean)	4.9	4.8	5.1	4.6	0.12
Percent ever attended school	10.3	12.7	7.1	9.3	0.35
No. of women	863	925	865	871	
<i>Currently married women</i>					
Currently using contraception (%)	5.1	3.4	2.7	4.5	0.62
No. of births in past 3 years (mean)	0.65	0.65	0.60	0.55	0.11

Randomization Tests

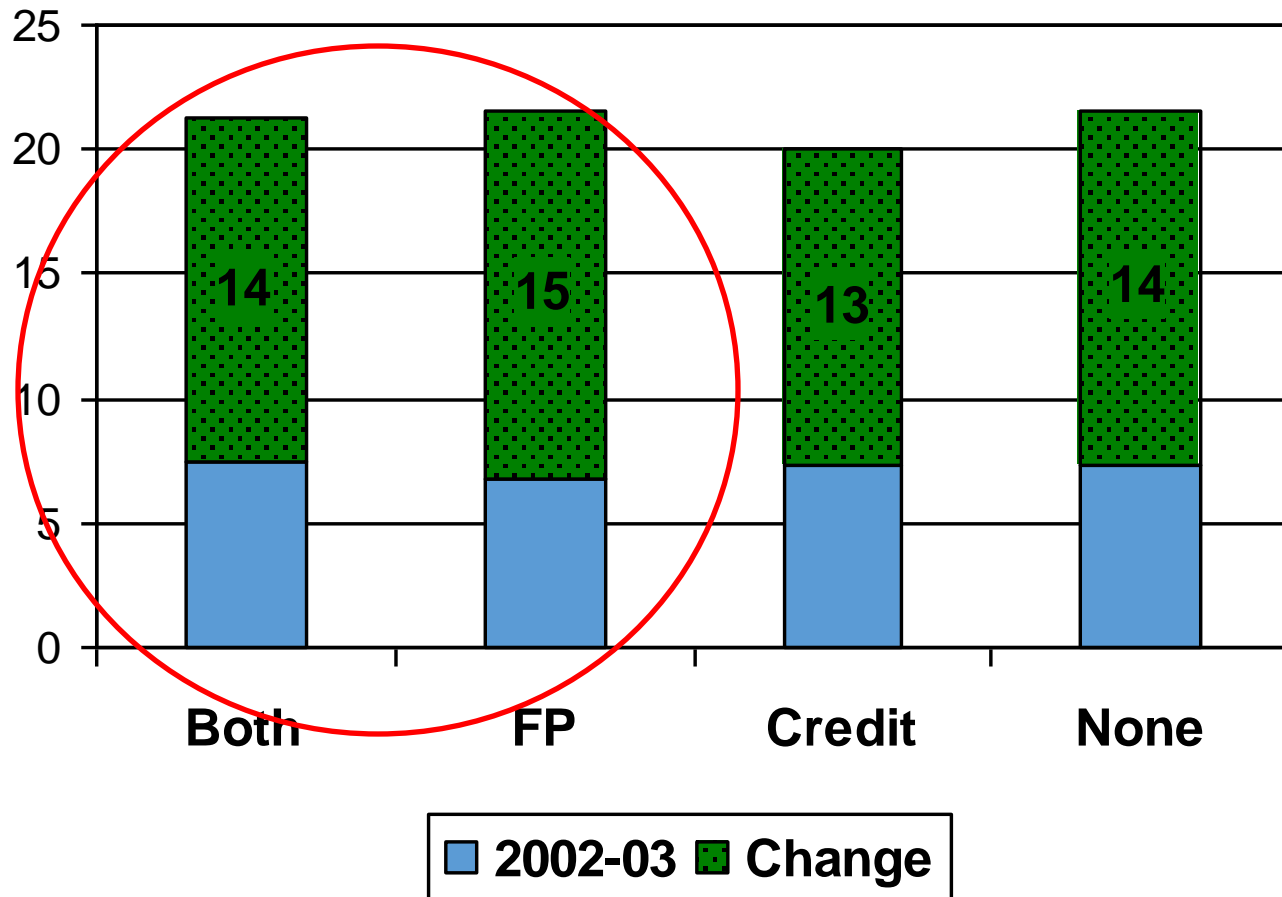
Select results for Oromia

	Both	Credit	FP	None	p-value
<i>All women 15-49 years of age</i>					
Currently using contraception (%)	7.5	6.7	7.3	7.3	0.99
Intend to use FP in the future	72.8	68.9	70.6	72.0	0.55
Know of any method of FP (%)	73.5	79.7	81.2	76.6	0.37
Have heard of pills/injectibles (%)	42.0	44.4	44.0	49.8	0.61
No. of births in past 3 years (mean)	0.46	0.40	0.53	0.41	0.11
Desired number of children (mean)	4.4	4.3	4.6	4.4	0.27
Percent ever attended school	46.8	48.6	45.5	45.7	0.89
No. of women	918	1007	963	994	
<i>Currently married women</i>					
Currently using contraception (%)	10.3	10.4	11.0	10.3	1.00
No. of births in past 3 years (mean)	0.65	0.62	0.77	0.59	0.13

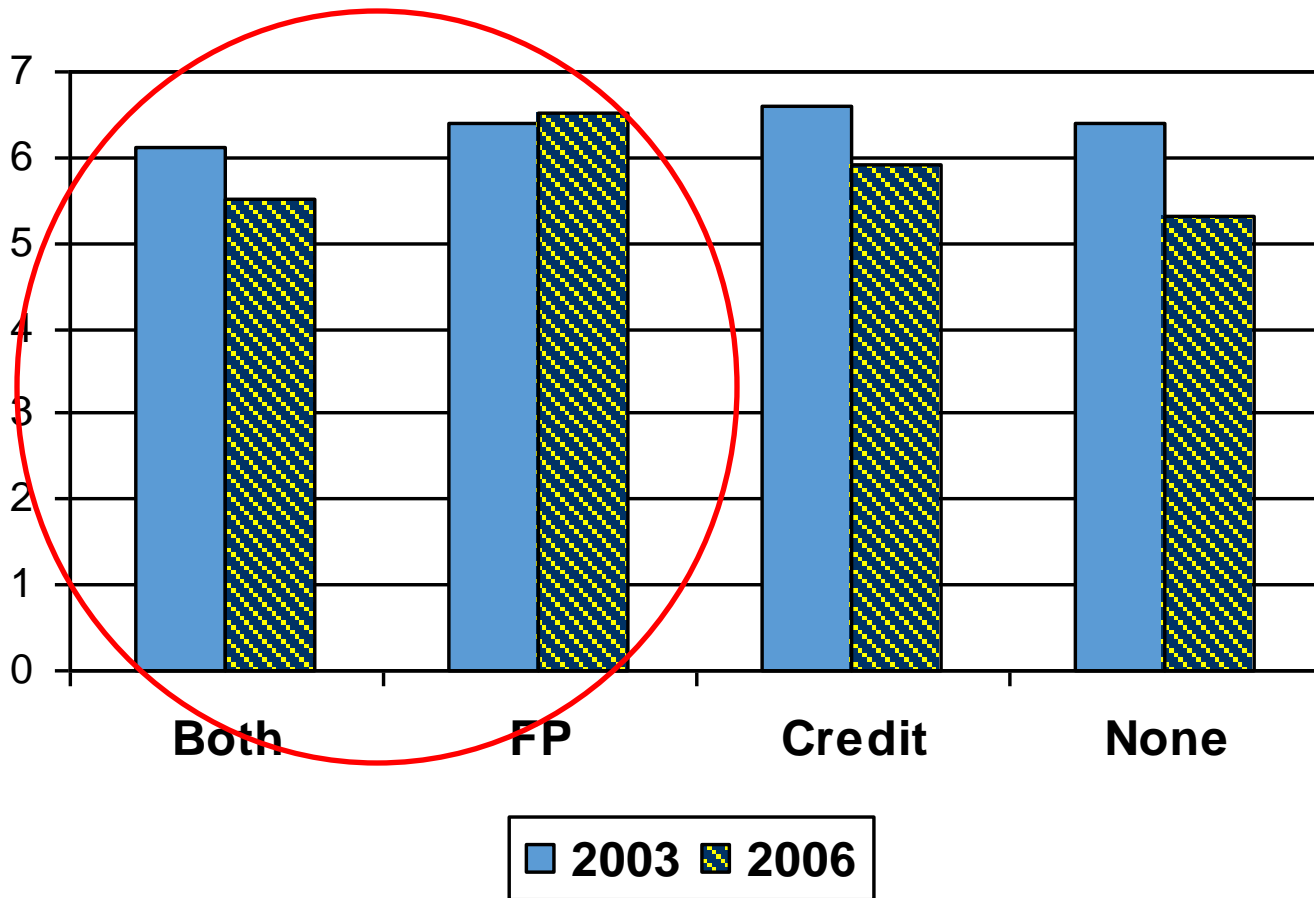
Current use of contraception in Amhara (2003 and change since 2003)



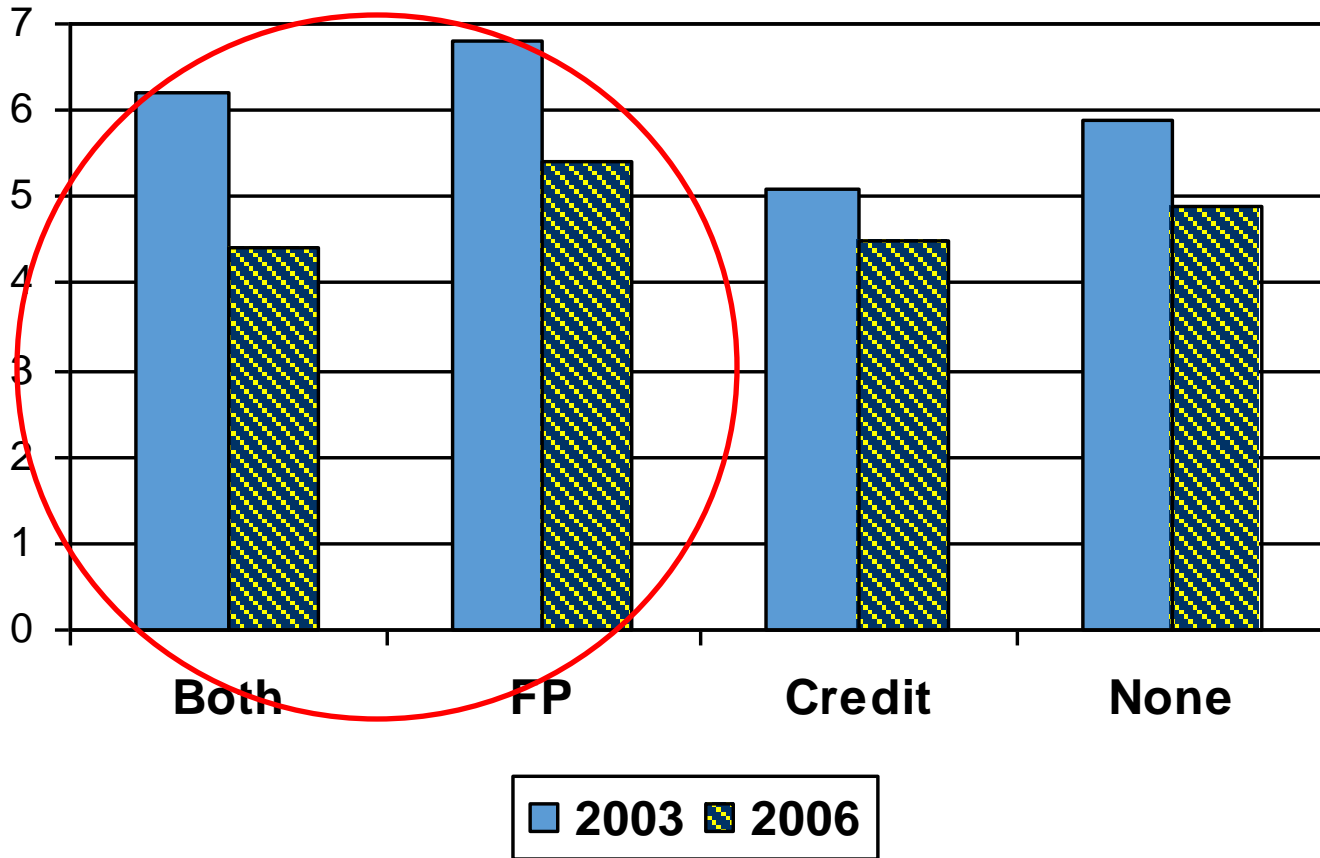
Current use of contraception in Oromiya (2003 and change since 2003)



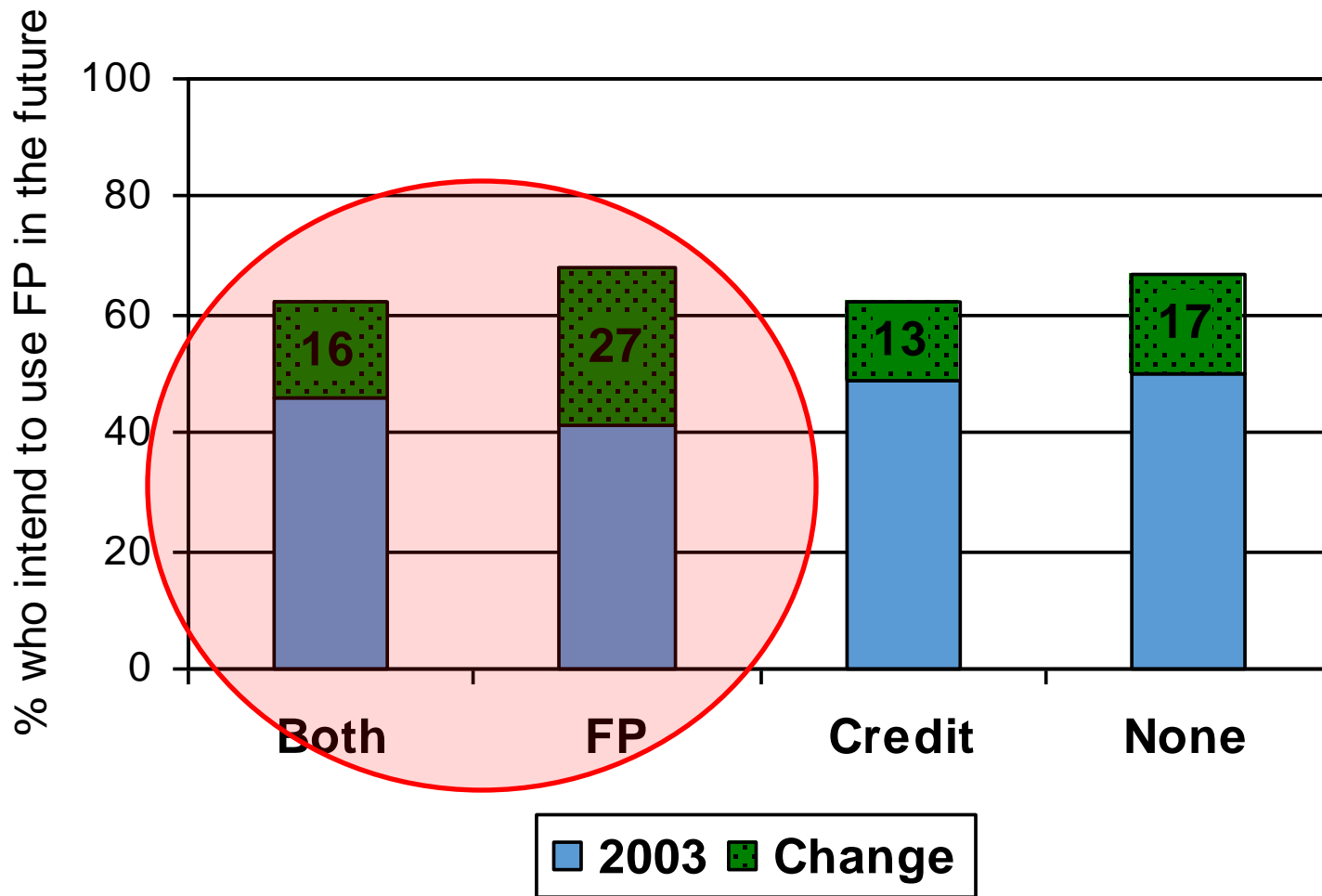
Total Fertility Rate (unadjusted) in Amhara (2003 and 2006)



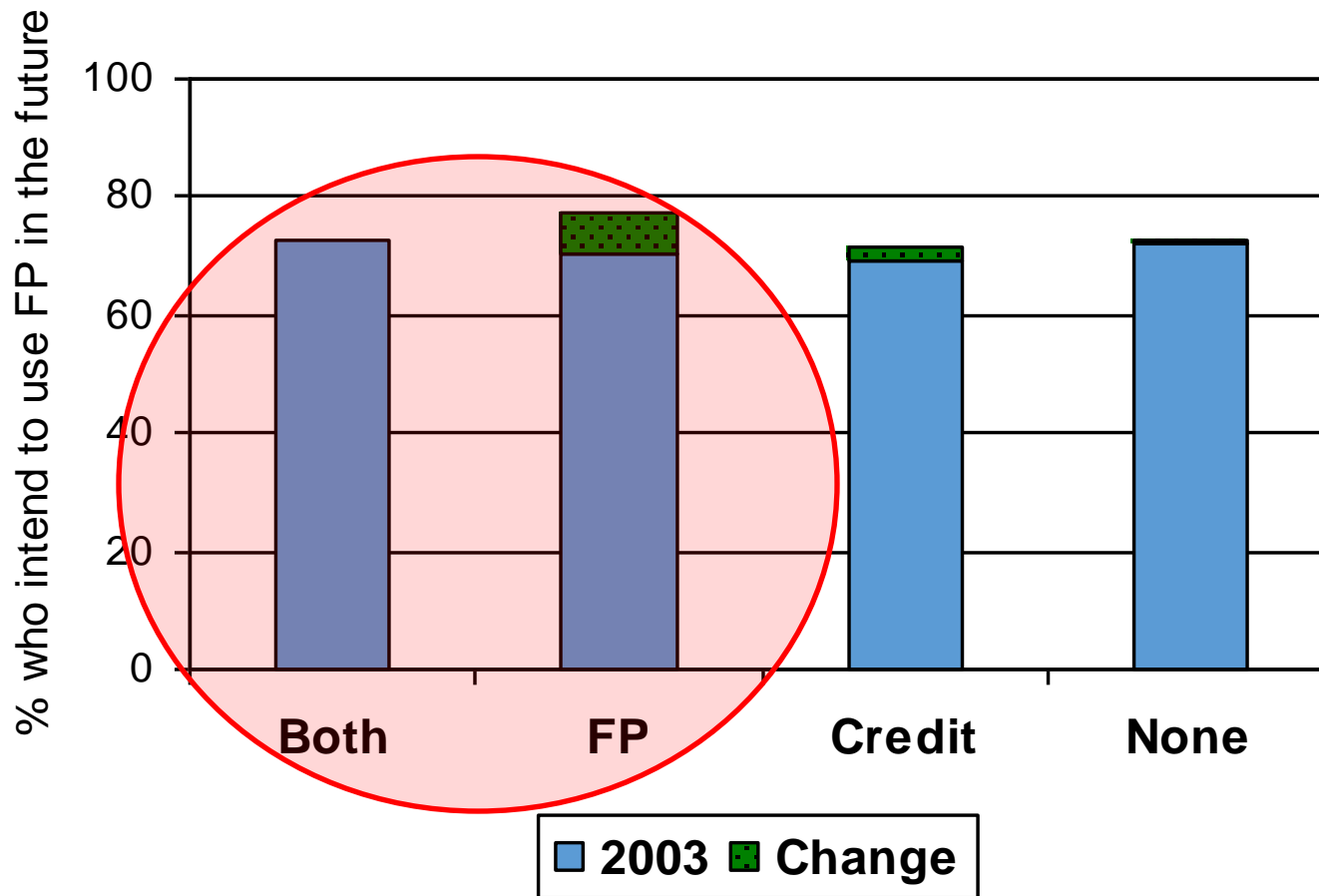
Total Fertility Rate (unadjusted) in Oromiya (2003 and 2006)



Intention to use contraception in future in Amhara (of those not currently using)

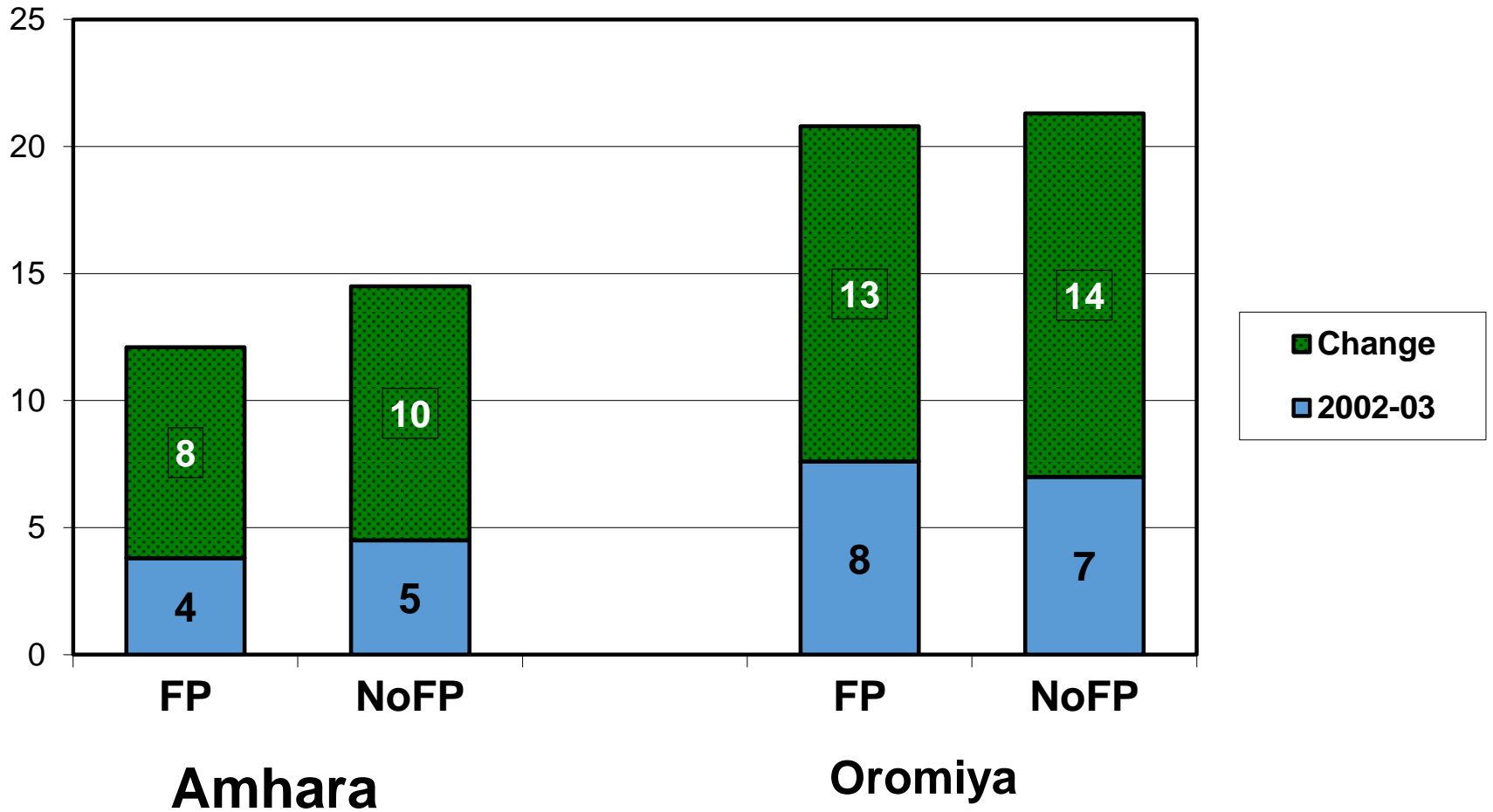


Intention to use contraception in future in Oromiya (of those not currently using)



Impact of FP

(regardless of linking with credit)



Summary of results

- Large increase in contraceptive use in just 3 years: 9% in Amhara, 14% in Oromia**BUT**
- Linking credit and family planning programs did not have any measurable impact on contraceptive use, fertility, or any other demographic variable
- None of the interventions, linked or unlinked, had any measurable impact on contraceptive use, fertility, and desired fertility, but **some weak effect on (future) intentions to use FP in Amhara**

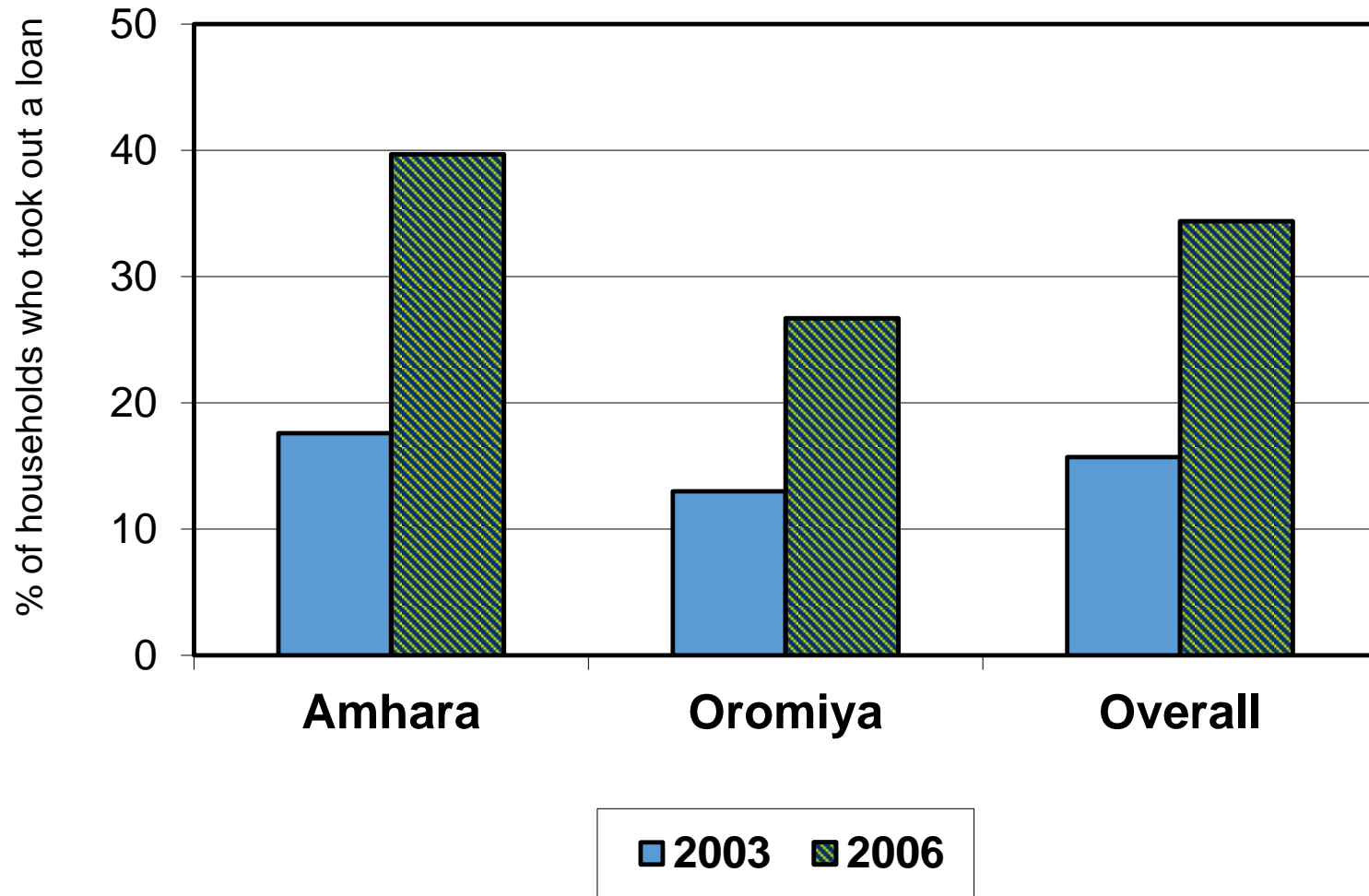
What explains these patterns?

- Randomization independent of implementation (but some imperfections)
- Implementation deviated in 28% PAs (but 2SLS addresses this and no difference between OLS & 2SLS results)
- Spillover of impact from neighboring PAs (possible because of blanket coverage but likely impact small because of nature of intervention)
- Services from other organizations/public providers in 1/2 of study villages (but FP use not affected and village fixed effects specification accounts for this)
- Method mismatch: FP services provided by Packard grantees (condoms, pills) not the primary choice of women - injectible

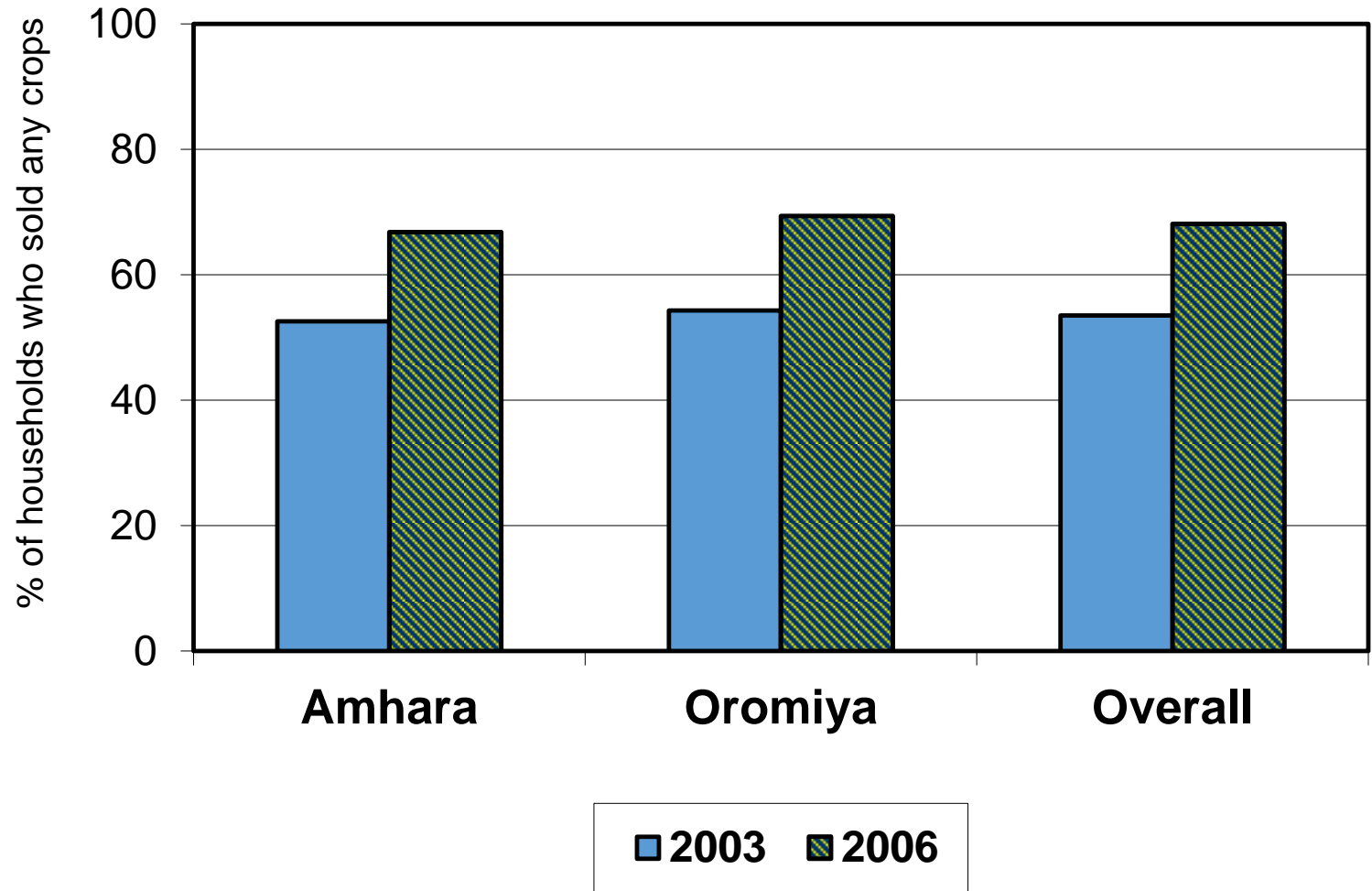
Findings (for Microcredit)

Overall Picture

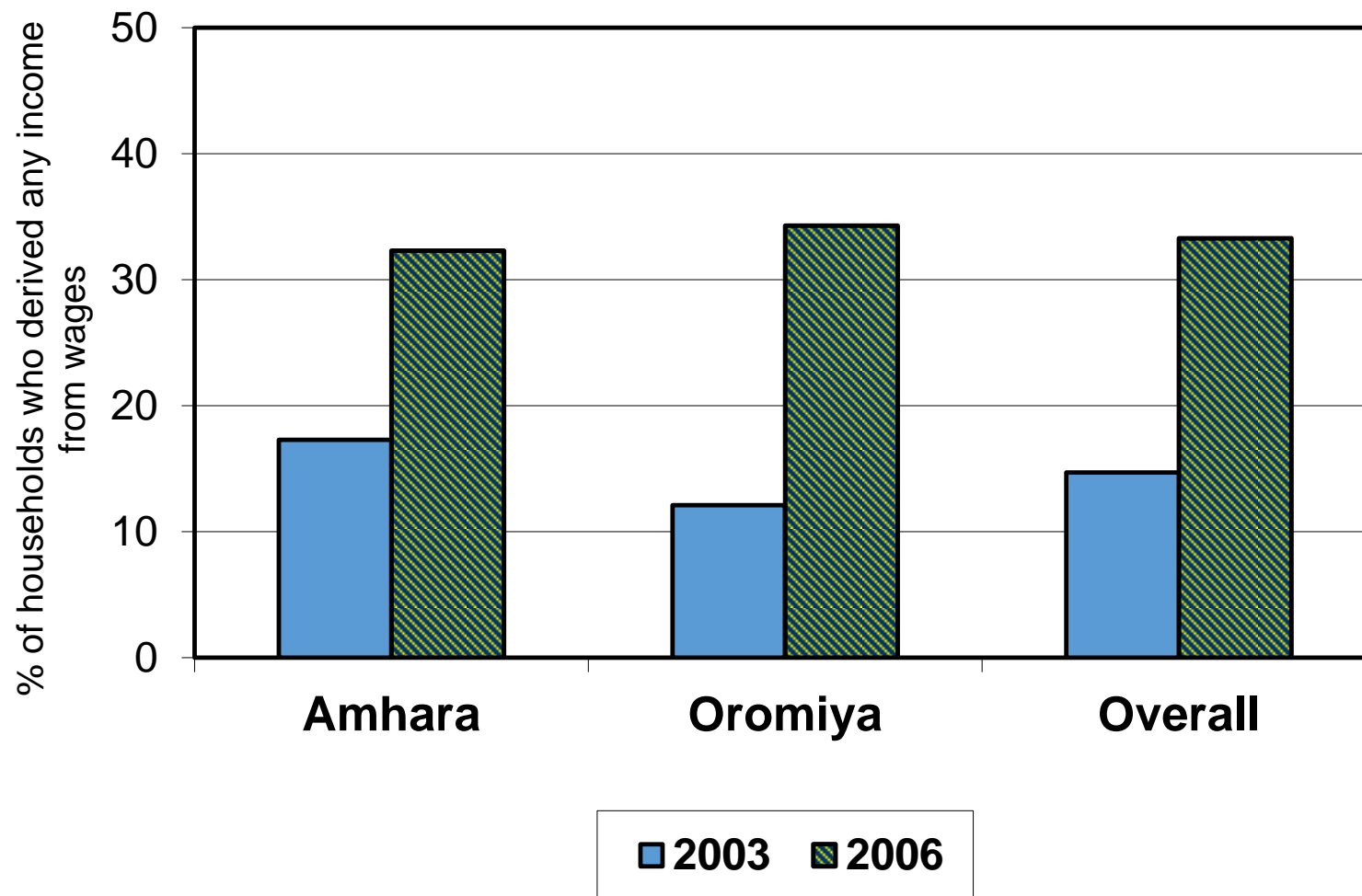
Household Borrowing



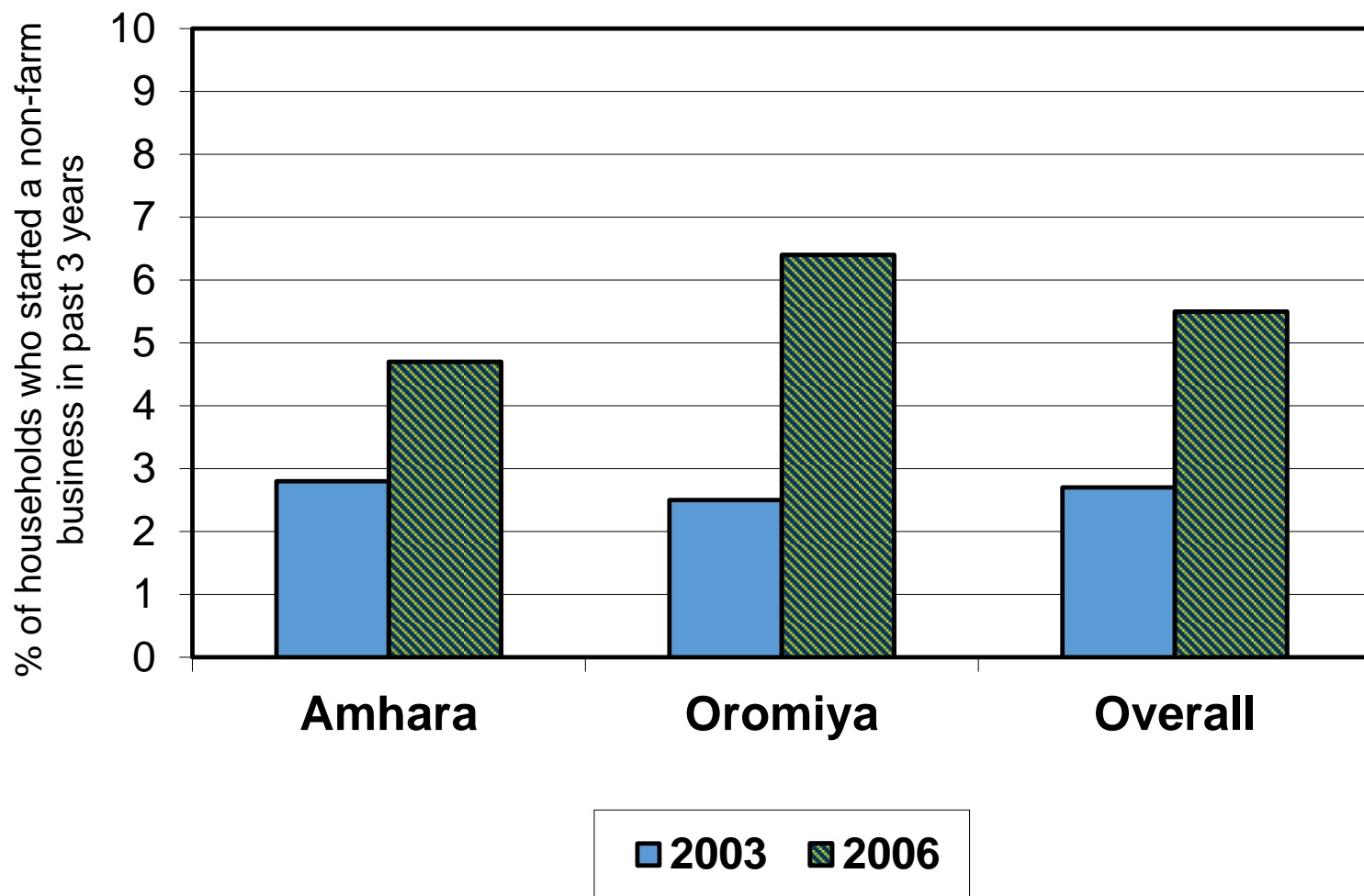
Crop Marketing



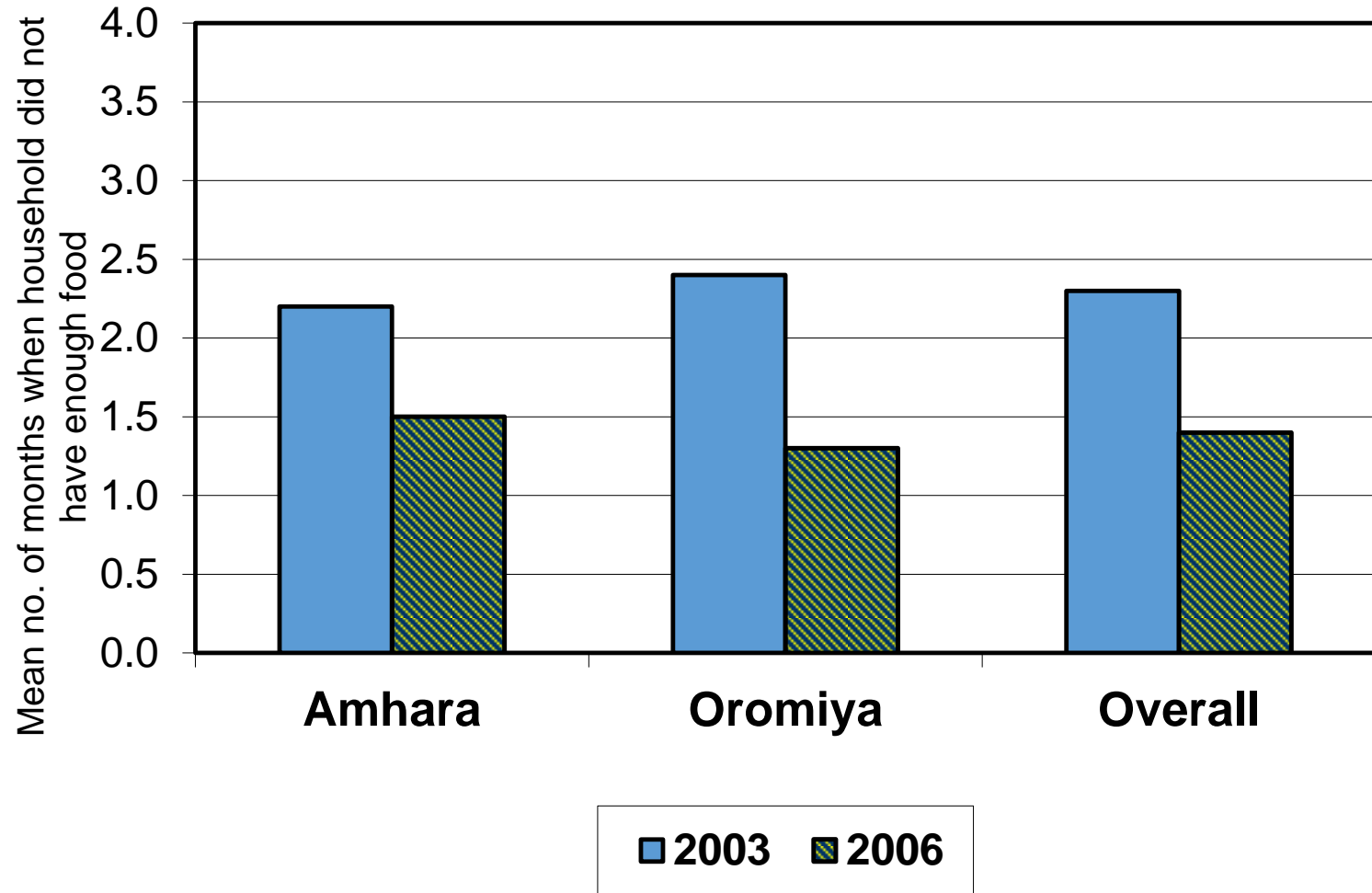
Wage income



Non-farm business initiation



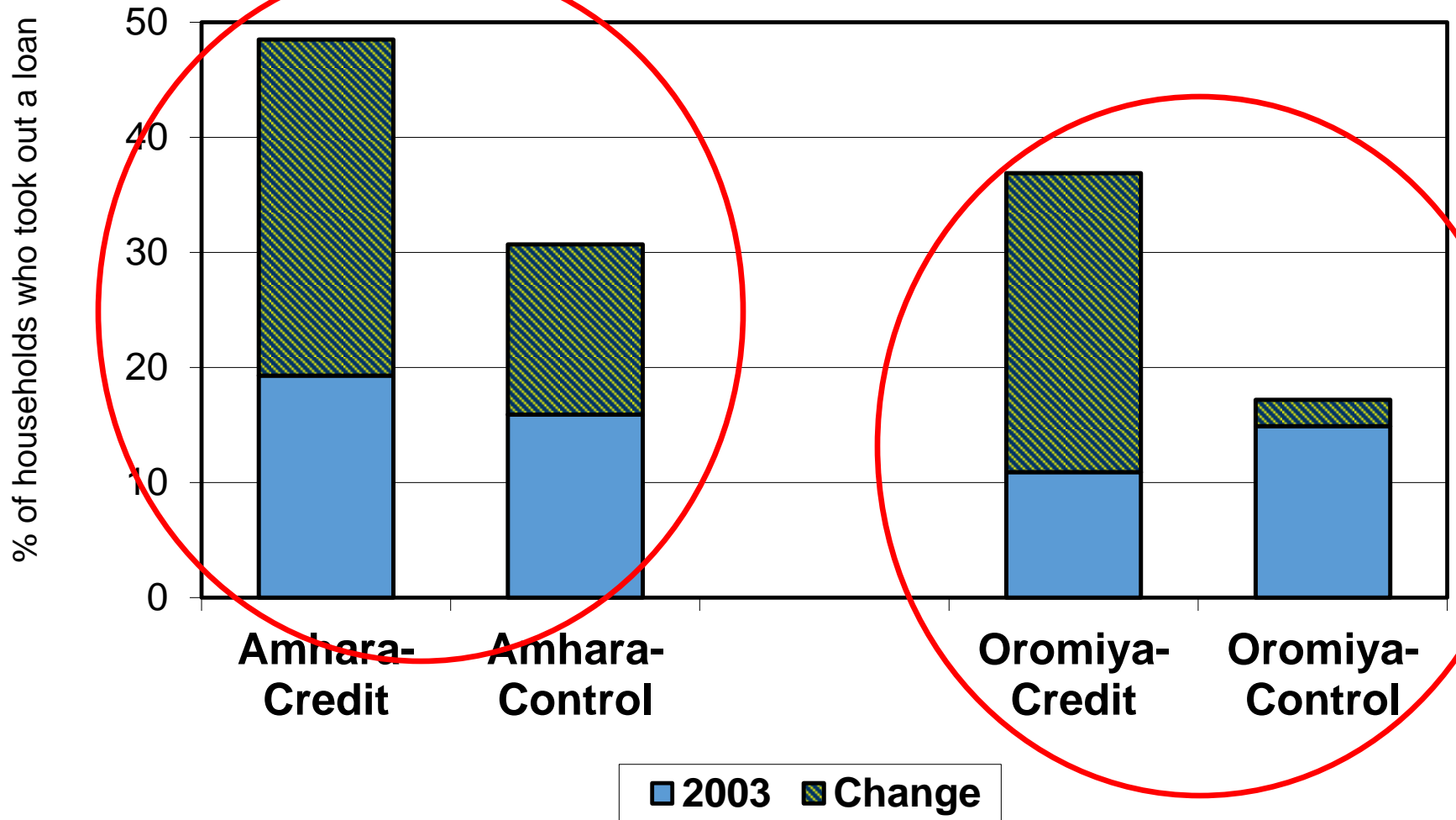
Household Food Security



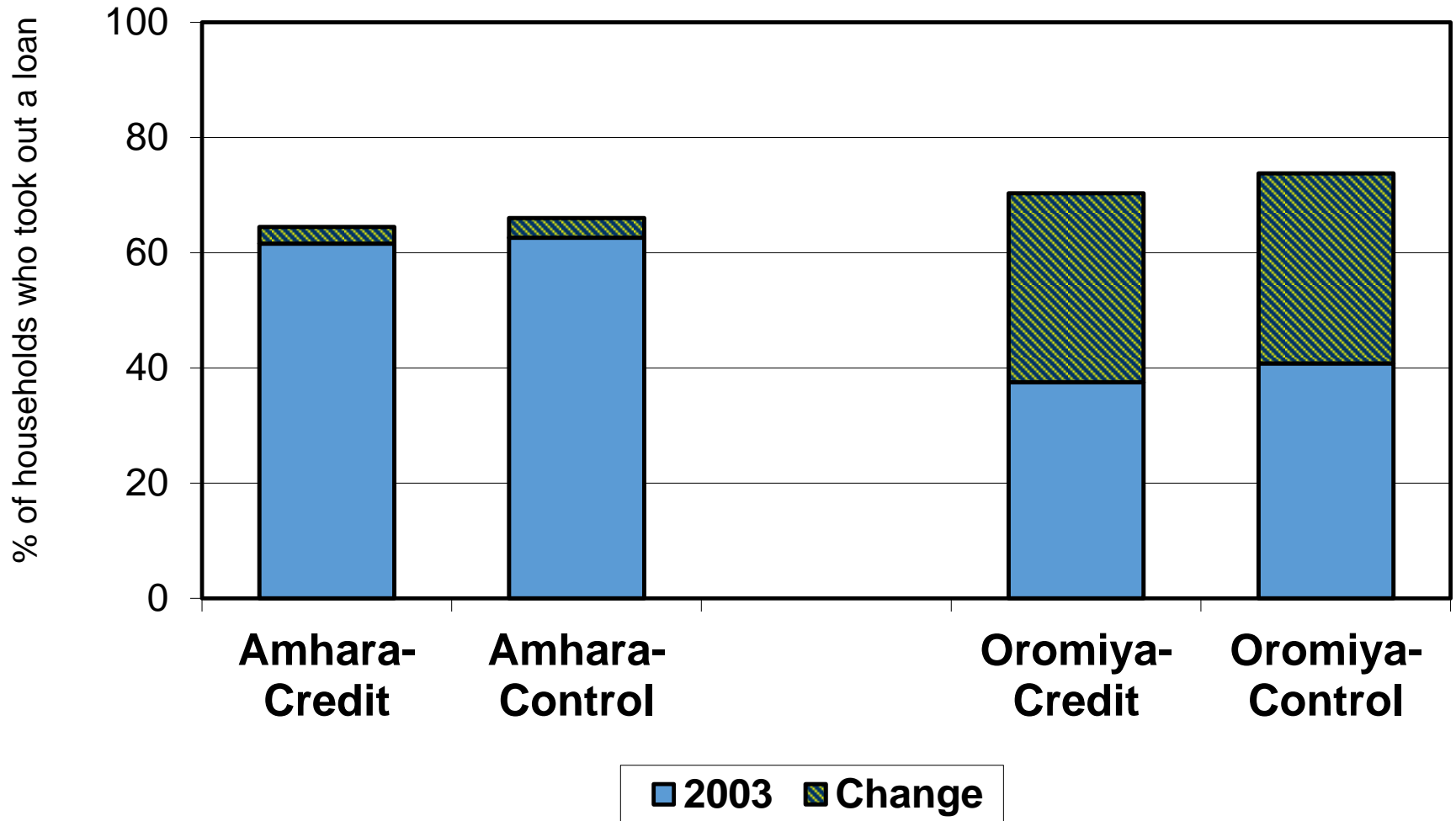
Findings

Impact of Microcredit

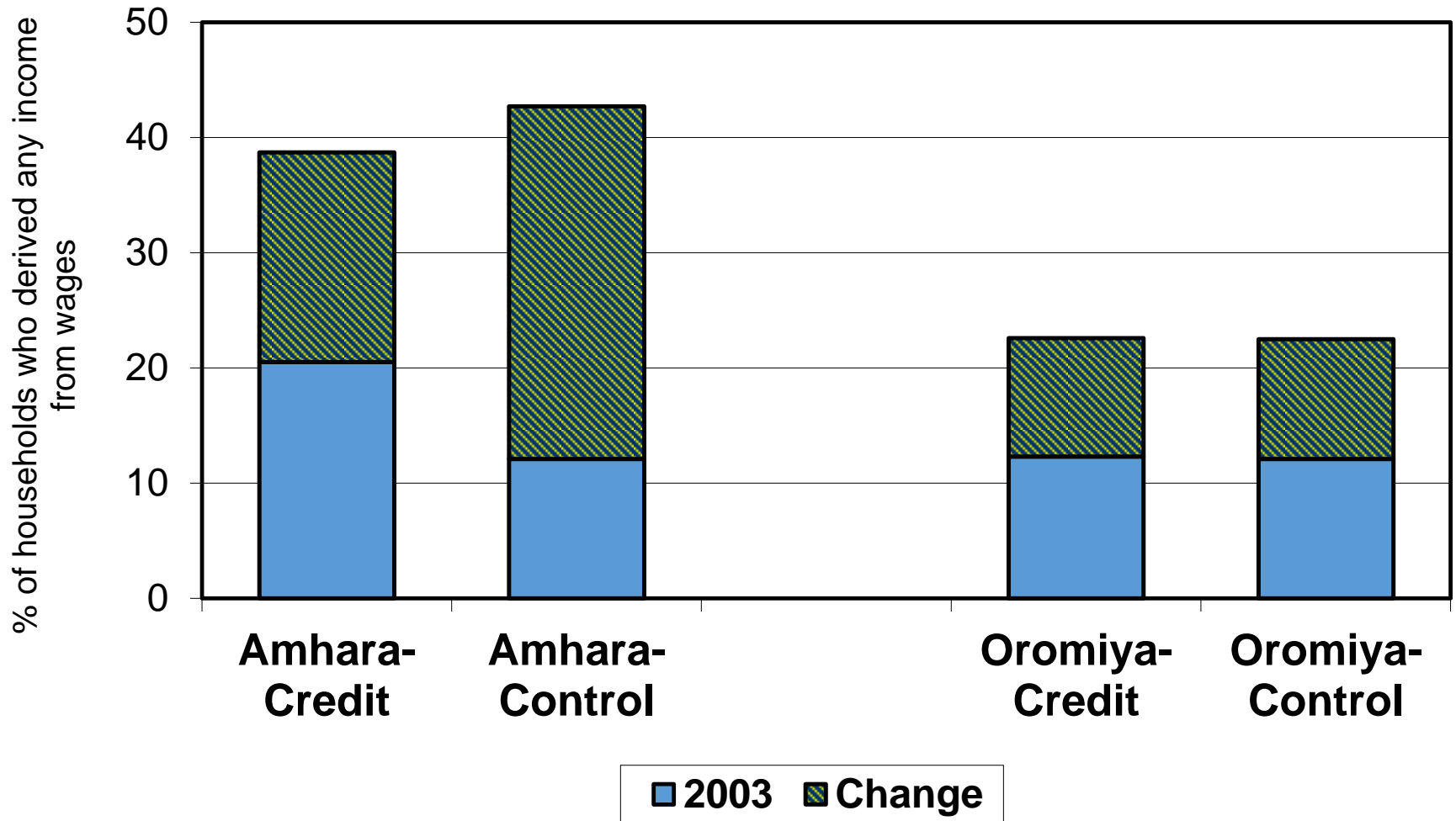
Impact on Household Borrowing



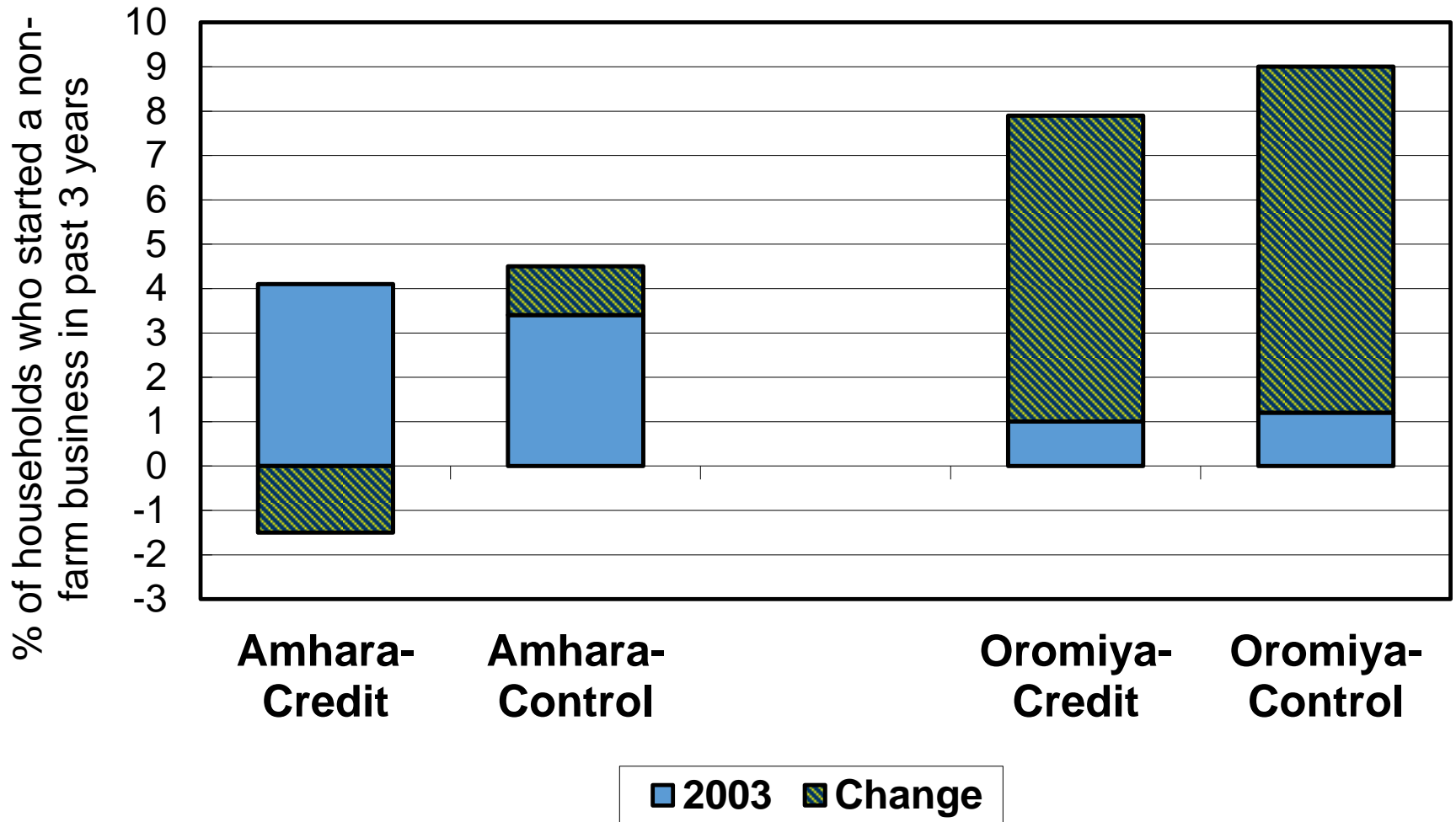
Impact on Crop Marketing



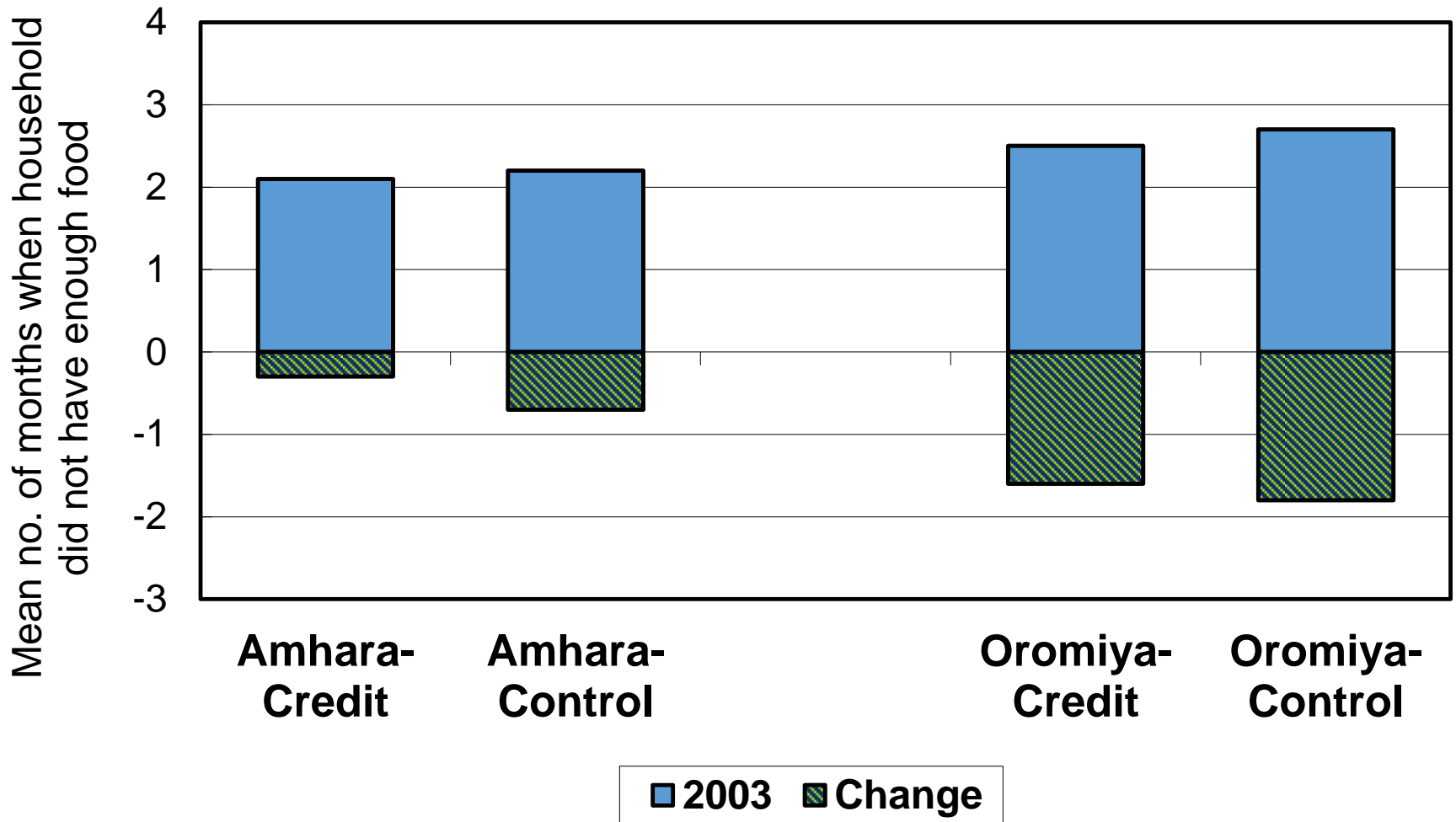
Impact on Wage Income



Impact on Non-farm Business Initiation



Impact on Household Food Security



Summary of results

- Intervention had an impact on borrowing
 - Extensive & intensive margins
 - Did not displace borrowing from other sources
- Had some impact on household food security
- But NO impact on business creation, labour supply, child schooling, women's empowerment (about 40 outcome indicators)

At the end of it ...several questions

- Are these findings reliable?
 - Yes, sample size is sufficiently powered
 - Yes-No as much as survey measures reflect true outcomes
- What would I do differently?
 - Design better instruments – to address variation management aspect
 - Pay greater attention to “other” programs
- Was it worth spending ~\$700,000?
- Programmatically ...what does it mean?