



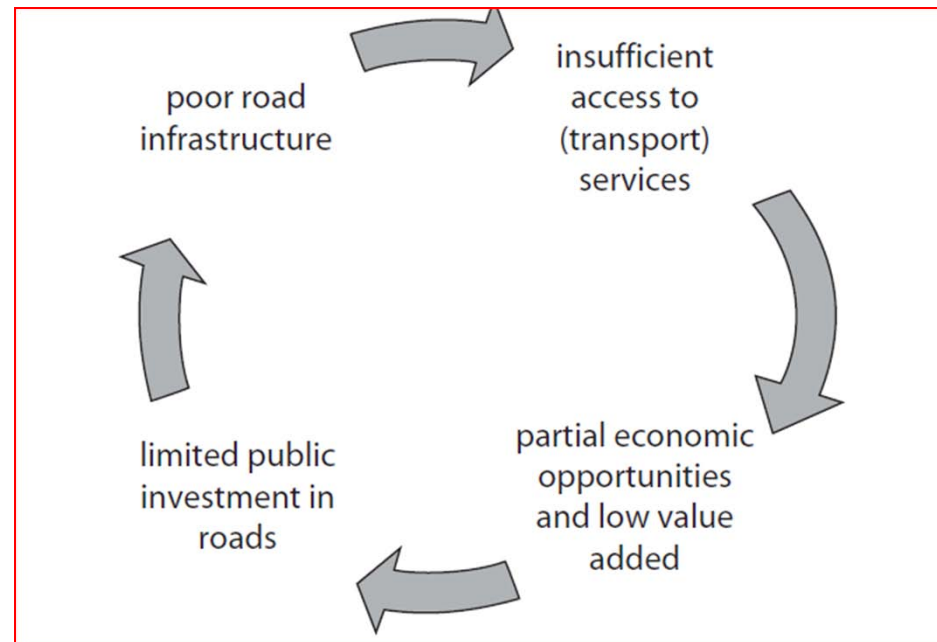
Using Road Investments to Stimulate the Economy

Christopher R. Bennett
Senior Transport Specialist
The World Bank



Transport and Development

The Rural Transport Trap



Source: Raballand, G., P. Macchi, and C. Petracco, *Rural Road Investment Efficiency. Lessons from Burkina Faso, Cameroon, and Uganda*, Directions in Development, Infrastructure, the World Bank, Washington DC, 2010.

Transport Helps Development When It



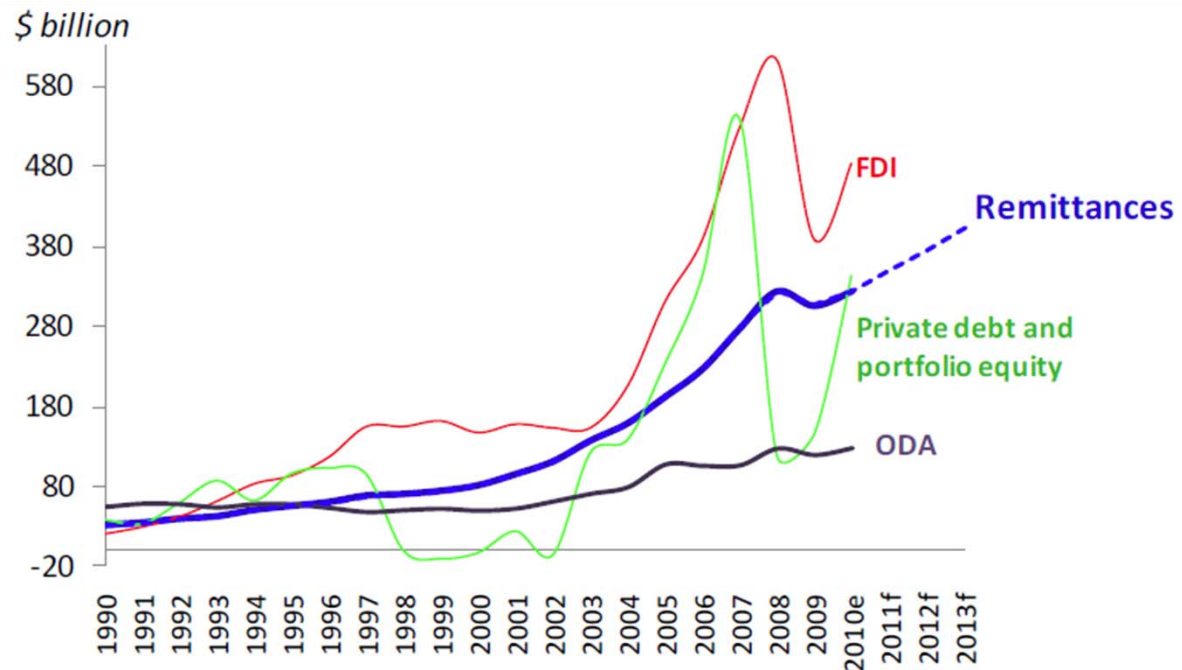
- Facilitates trade
- Makes cities work better
- Opens rural economies
- Gives access to health, education & social services
- Is safe, clean and affordable





The Global Financial Crisis

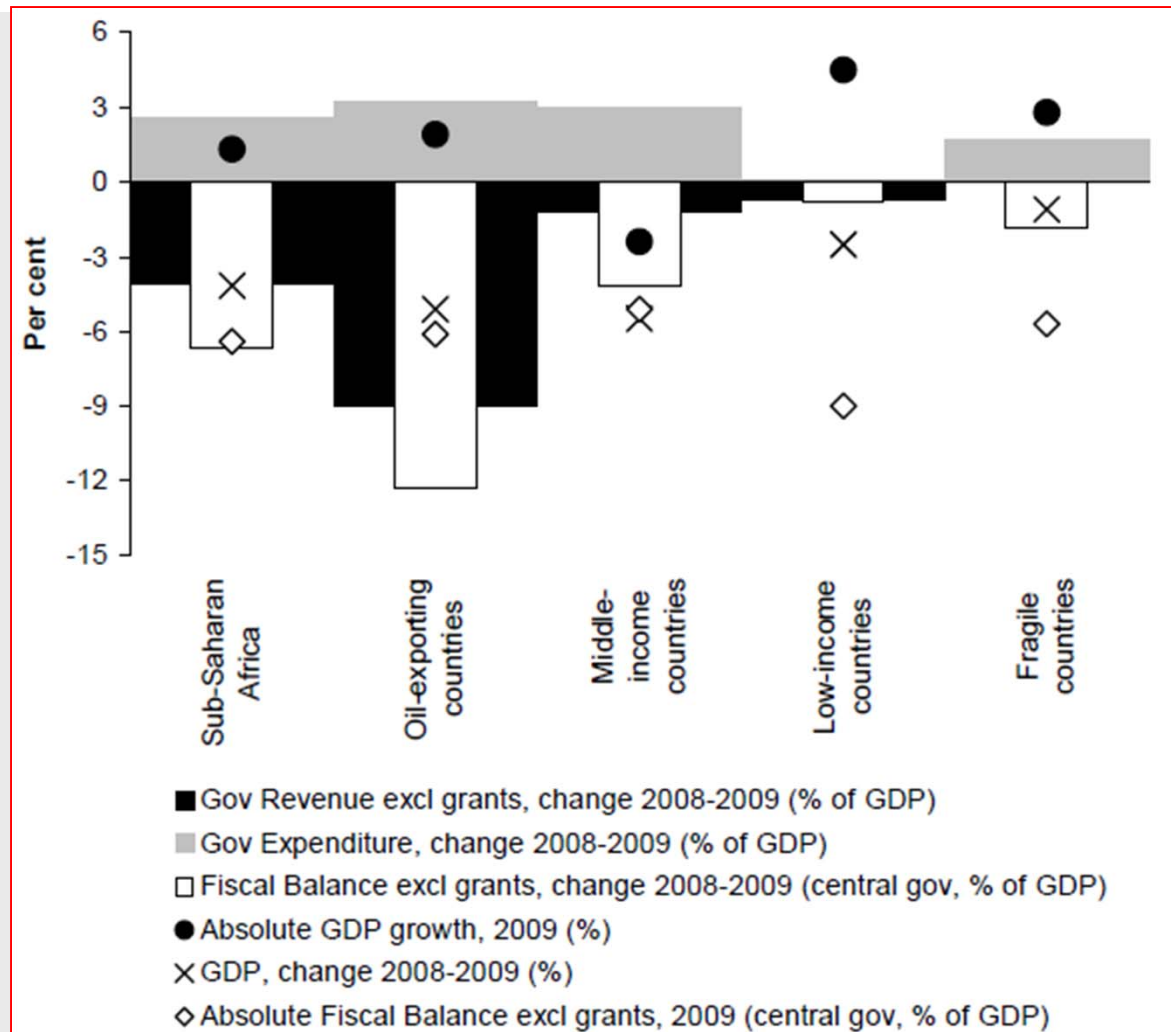
GFC and Capital Flows



e = estimate; f = forecast

Source: World Development Indicators and Migration and Remittances Unit estimates

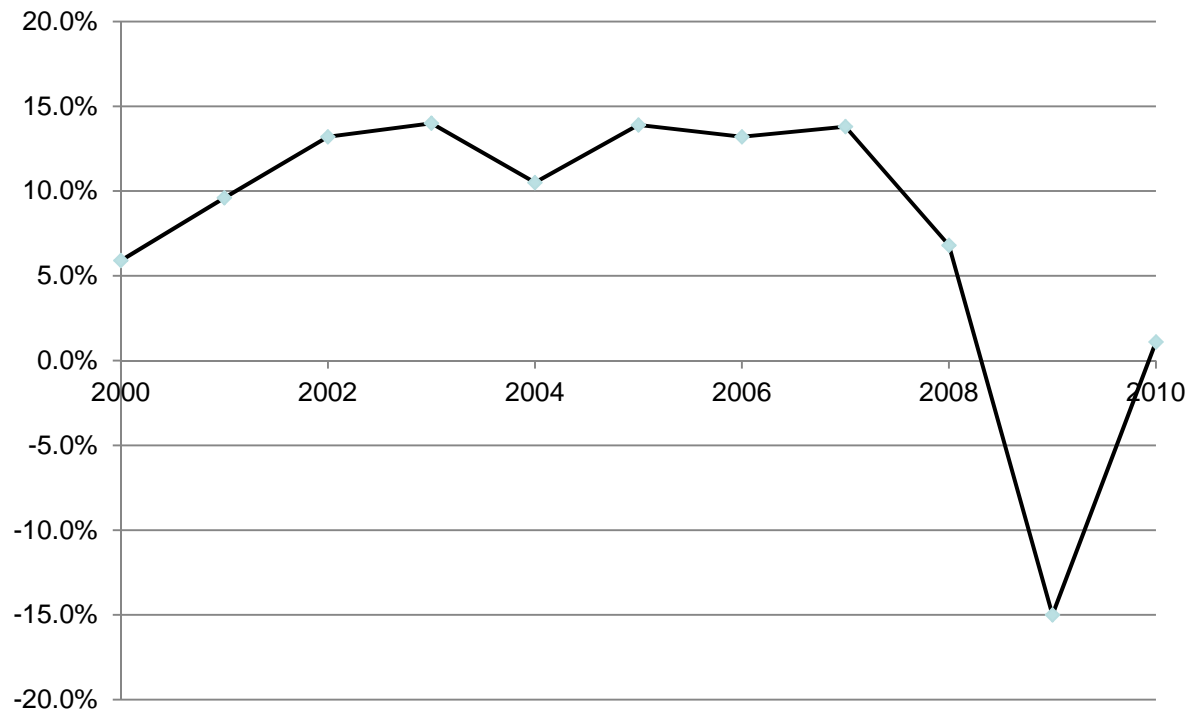
Government Revenues Crashed



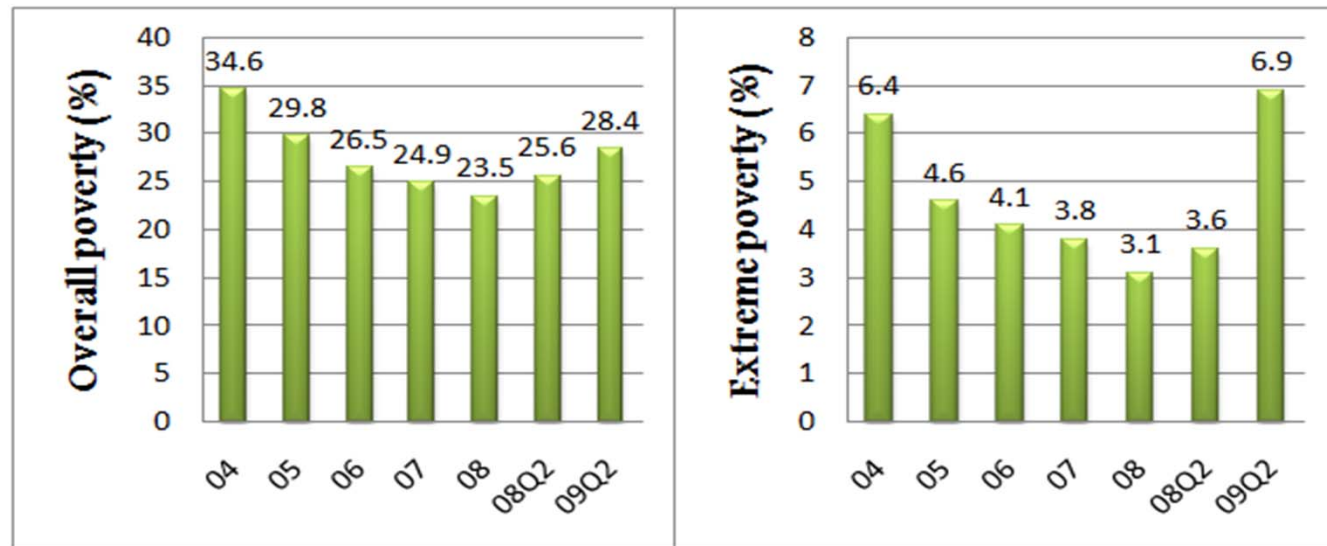
Source: Oxfam

Some Countries Hit Hard: Armenia

GDP Growth



Exacerbated Poverty: Armenia





Government Responses: Economic Stimulus

- Build Infrastructure
 - Support R&D and Innovation
 - Invest in Human Capital/Education
 - Energy Efficiency/Green Technology
 - Innovation/Entrepreneurship
-



Stimulating the Economy

- Identify Suitable Investments
 - Mobilize Resources
 - Maximize Employment Opportunities
 - Move Quickly
-



Suitable Investments

“Shovel-Ready Was Not as Shovel-Ready as We Expected”

President Obama – June 2011

Not China's Ghost Towns

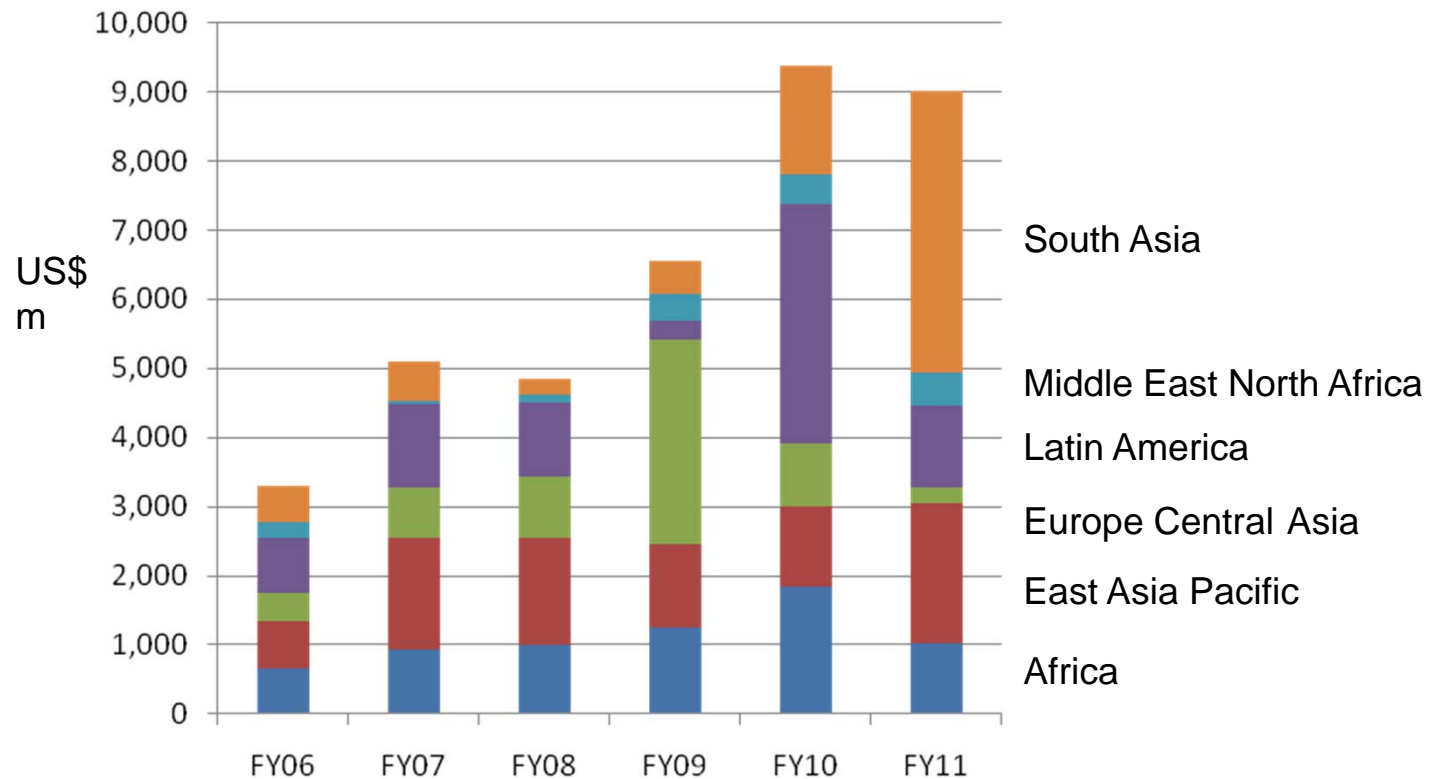




Mobilizing Resources

- Government revenues plunged
 - Private sector lending almost stopped
 - International donor lending increased
-

World Bank Transport Lending



Maximizing Employment Opportunities





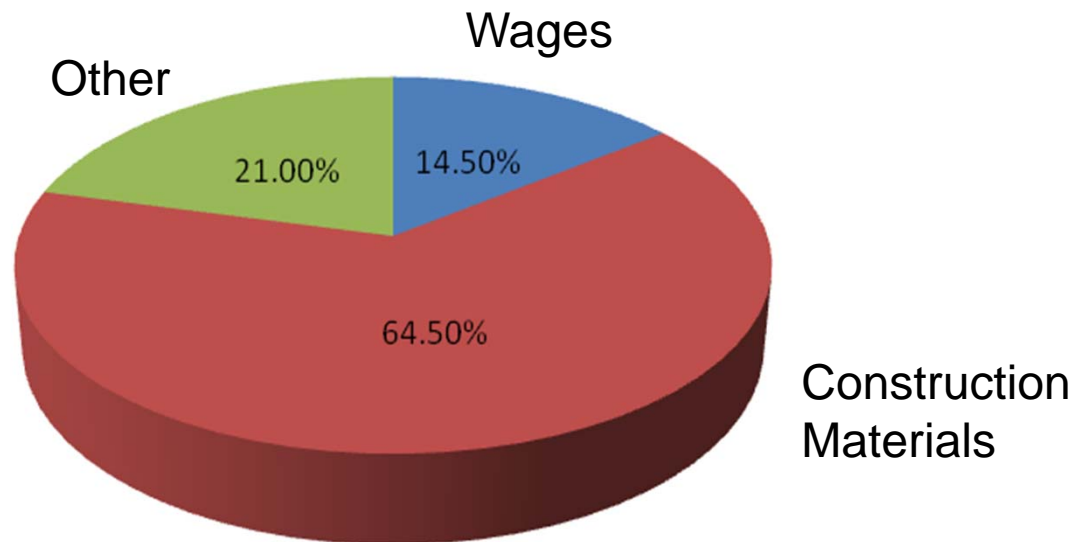
Employment

- Primary
 - Direct project work
 - Secondary
 - Indirect work through supply of materials and equipment
 - Tertiary
 - Induced from primary and secondary
-

Wages Small Component

Georgia 2009

Distribution of Road Construction Costs





Wages Never Dominate

Technology Option	Percentage of Cost			
	Materials	Wages ^{2/}	Equipment	Total
Labour-Intensive ^{1/}	60	35-40	0-5	100
Intermediate (Selective Use of Equipment)	60	25-30	10-15	100
Equipment-Intensive	60	5-10	30-35	100

^{1/} Applicable to tracks and uncompacted roads; materials include tools, such as picks, shovels, axes, etc.

^{2/} Skilled labor requirements (number and range) increase with increasing equipment intensity in construction

Source: NRRDA, 2007



Example: Armenia Lifeline Roads Project

	Construction			Financing (US\$ million)		
	Season	Number of Contracts	Km. Improved	World Bank	Govt. of Armenia	Total
Original	2009	25	100	25.0	5.4	30.4
Original Cost Savings	2009	5	18.5	n.a-	n.a-	n.a-
Additional Finance 1	2009-2010	34	121.5	36.6	9.1	45.7
Additional Finance 2	2010-2011	25 (Est.)	190 (Est.,)	40.0	10.0-	50.0-
Total		89 (Est.)	430 (Est.)	101.66	24.5	126.1

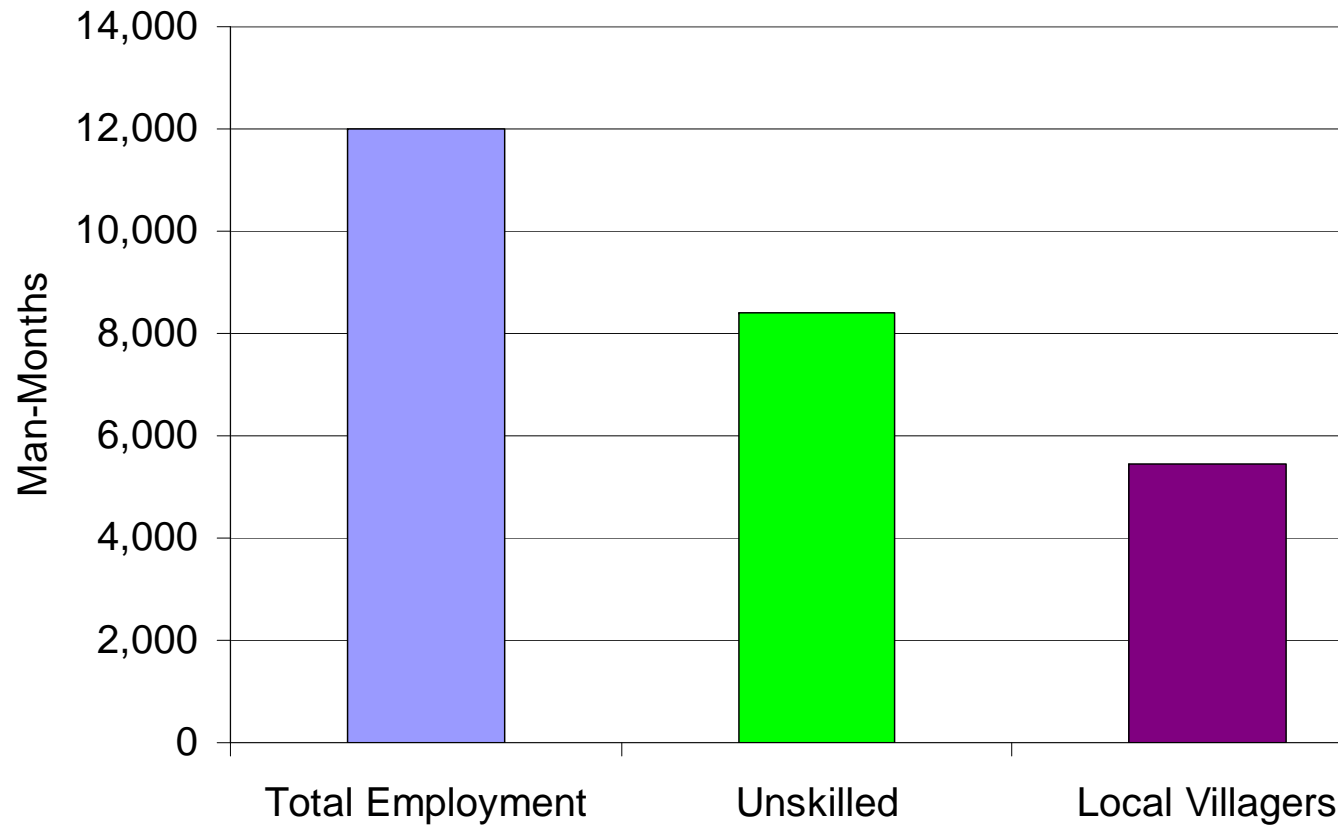


23.03.2010



24.03.2010

Armenia Job Creation - 2009





23.11.2009



24.03.2010



23.11.2009

26.11.2009



Move Quickly

- Accept Uncertainty in Designs and Quantities
 - Expect Variation Orders
 - Update Designs At Mobilization
-



Lessons Learned

- Have pre-identified investments
- Try new solutions
- Maximize labour – but manage expectations
- Prepare quickly – but do walkover survey before construction starts
- Major review mid-way through works

Questions

