
Agriculture, Education, Information Technology: Critical Sectors For Armenia's Economy

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LEFT BRAINED GEEKS

- **Agriculture: village production, agri-business, agri-tourism**
- **Education: standards, practices, delivery**
- **Information Technology: awareness, availability, barriers**
- **Moving Forward: achieving objectives, partnerships, opportunities**
- **Summary**

- **Village Economy and Self-Sustainability: the nation is highly rural**
- **Dairy, Produce, and Wine: high promise for consumption and export**
- **Agri-Tourism: an untapped market, booming world-wide**
- **Bio-Diversity and the Organic Movement: what was old is new again**
- **Sector Promotion: the good and the ugly**

Village Economy, Self Sustainability

- **About 40% of Armenians live in rural areas**
 - 2.9 M total population
 - 1.25 M Yerevan metro, 0.5 M other metro
- **Many villages populated by immigrants during Soviet era**
- **Granted title to land during privatization**
- **“Make everything yourself” mentality**
- **Hard work takes toll on people**
- **Families cope by exporting workers**

Dairy, Produce, Wine

- **Armenia produces agricultural products suitable for consumption and export**
- **Small to large scale dairies in addition to village production**
- **Handcrafted cheese such as Motal**
- **Sun-dried fruits, not just apricots, with world-class flavor**
- **Value and connoisseur wine varieties**

Bio-Diversity and Organics

- **Over 540 different plant species with a density 100 times above world average**
- **Unfortunately 35 economically important species are now extinct**
- **Armenian plant strains are rare and difficult to find elsewhere**
- **Organic production by accident: pesticides cost too much**
- **Movement to produce high quality organic crops for export**
- **Economic success in Europe most likely**

Agri-Tourism

- **Armenia nominally promotes tourism**
- **Focused on own Diaspora: churches, culture, things Armenians like**
- **Potential for developing tourism based on agriculture, especially village production**
- **Some bed and breakfast, hotels of sufficient quality; most not**
- **No reasonable domestic bus or train transportation network**
- **Road-side services insufficient for most senior travelers except Yerevan-Jermuk**
- **Intense effort needed for success**

Sector Promotion

- **Dedicated, positive groups are promoting agriculture industry**
- **International NGO and private owners are working together**
- **Armenian government lax in establishing sufficient rule of law, health, safety**
- **Exports require individual inspection to meet certification, other standards**
- **Domestic common carriers not popular**
- **Some actors detrimental to forward progress, but easily avoided**

- **Standards and practices: comparing Armenia to other countries**
- **Prescribed vs Delivered Curricula: government disconnect from classroom**
- **Primary and Secondary Education: better math and physics, poorer language arts.**
- **Tertiary Education: graduates plan to leave**
- **Bribery and Corruption: how professors live on 200 USD per month**
- **Apprenticeship: a positive step forward**

Standards and Practices

- **Armenia uses western educational model**
- **Private early education, e.g. pre-school**
- **Compulsory primary and secondary school**
- **International, national, regional universities**
- **Signatory to Bologna process in 2005**
- **Ministry of Education accredits and establishes curricula**
- **Public and private institutions can co-operate in all activities**

Prescribed vs. Delivered Curricula

- **Public primary and secondary educational institutions have insufficient funding**
- **Basics are covered, but not minimum needed for modern education**
- **Many families supplement art and music education at home**
- **Only 3.2% of GDP is spend on education, compared to US rather low 5.3%**
- **In spite of this, Armenians have some educational advantages over US**

Primary and Secondary Education

- **Better than US in math and science:**
 - **Physics, trig part of standard curriculum**
 - **Student interest in chess, math, science competitions outside of classroom**
- **Lagging in language arts:**
 - **Many Armenians cannot write reports**
 - **For university attendees, Armenian becomes a secondary language**
- **Average student does not go to college**
- **But incentive exists as army duty delayed for university attendees**

Half Will Leave

- **Half of Armenia's IT sector university graduates will not stay in-country**
- **Remaining half "not fit" to perform IT work without additional experience, training**
- **Probably true for other sectors as well**
- **Difficult for firms to find qualified people**
- **Loyalty a problem during boom times**
- **Result not unique to Armenia: India and US face a similar problem**

Bribery and Corruption

- **Average professor salary: 70,000-90,000 AMD / Month**
- **Below national average salary**
- **Pay for grades model**
- **Consequences:**
 - **Armenian degree means nothing**
 - **4.0 student may be worse than 3.0**
 - **Three, six month work trials necessary**

Apprenticeships

- **Does your five year old Facebook?**
- **Major difference between first and second world youth growing up:**
 - **First world poor have public vocational education**
 - **Second world rich have to teach themselves**
- **A feudal practice can help:**
 - **Get education through available schooling**
 - **Perform simple job to build skills**
 - **Functions like first-world intern programs**
- **Sound business planning must take apprenticeships into account**

Information Technology

- **Data Awareness: Technology's importance to the average Armenian**
- **Internet Access: cost and methods**
- **Document Encoding: why Armenians can't read digital Armenian**
- **Educational Barriers: computers are in the classroom, but students are not.**
- **Mobile Wars: Competition among wireless operators**

Data Awareness

- **Varies based on age level:**
 - Gen X and Y (< 25) are “connected”
 - Older workers (30-50) may use part time
 - Retirees (55+) not at all
- **Contrast with first world experience:
Grandma emails digicam pics**
- **Devices are expensive:**
 - Digital camera 2-3x more in absolute cost
 - Computer up to 4x for same capability
- **Substantially less disposable income:**
 - Average salary ~100,000 AMD/176 hours
 - Less than \$2/hour
 - Compare this with US minimum wage

Internet Access

- **DSL via Beeline (former Armentel)**
 - **1 Mbps DLS @ 40,000 AMD / Month**
 - **No “per unit” data use charge**
 - **4x more expensive than US absolute cost**
- **3G via VivaCell USB Modem**
 - **15 GB @ 19,900 AMD / Month**
 - **In line with US absolute cost**
- **Corporate Data Access**
 - **1 Mbps down/0.25 up @ 180,000 AMD / Month**
 - **2 Mbps bidirectional @ 360,000 AMD / Month**
 - **In line with US T1 pricing**
- **Absurdly high as percentage of income**

Document Encoding

- **There are two ways to encode Armenian letters in a digital document**
- **Armenian Standard Code for Information Interchange or ArmSCI**
 - **Eight bits for 256 maximum characters**
 - **Roman in characters 0-127, Armenian 128-255**
- **UNICODE**
 - **Sixteen bits for 65,536 maximum characters**
 - **Machine native 8-bit set in 0-255**
 - **Overlay pages for each different language**
 - **Supports all international languages**
- **UNICODE has been a standard since 1995**
- **Most software is “cracked” and does not include the optional disk-based add-on**

Educational Barriers

- **The good:**
 - **Ministry of Education has decent curriculum**
 - **Age appropriate, Armenian textbooks printed**
 - **Covers fundamentals and higher level skills**
- **The bad:**
 - **No actual funding of program**
 - **Teachers not trained to deliver curriculum**
 - **Headmasters against students using computers**
- **The ugly:**
 - **Excellent program is in place now**
 - **But not being delivered to students**
 - **Very good or poor equipment, nothing between**

- **US market:**
 - **300,000,000 people**
 - **Five major carriers (AT&T, Sprint/Boost, T-Mobile, Verizon, Metro PCS)**
 - **6,000,000 subscribers / carrier**
- **Armenian market:**
 - **3,500,000 people**
 - **Three carriers (Beeline, VivaCell, Apaga)**
 - **750,000 subscribers / carrier**
- **WiMax available in Yerevan metro**
- **Apaga starting WiFi in regions**

Moving Forward

- **ոչ is Not the Answer: why open borders are crucial to IT business development.**
- **Don't Give, But Loan or Invest: successful methods of achieving business objectives in a humanitarian manner**
- **External Influences: successful and latent Diaspora contributions to education.**
- **Partner Teams: the difference between positively and negatively achieving objectives**
- **Entrepreneurship: small business opportunities for in-country Armenians**

It is Not the Answer

- **Armenians produce rather than consume**
 - **Self-sufficiency romanticized**
 - **Average salary below minimum necessary to buy food and clothing, let alone pay rent**
- **Domestic production has few champions**
- **Lax rule of law and civil society progress unattractive to foreign direct investment**
- **Armenia does not have good relations with any of its four neighbors**
- **Promote regional economic development:**
 - **Requires open borders *and* minds**
 - **Best method to seriously develop economy**

Don't Give But Loan Or Invest

■ **Gifts:**

- **Armenia is a developing country that needs work, not hand-outs**
- **Diaspora return on investment far lower compared to China, India, others**
- **Donations not monitored per World Bank**

■ **Loans, Investment:**

- **AUA TRDC program more effective when training charged, loan must be repaid**
- **Expecting repayment increases caliber and quality of recipient**

External Influences

- **Diaspora sponsored educational programs are sometimes successful, sometimes not**
- **AGBU Examples:**
 - **Armenian University of Armenia**
 - **Gyumri Orphanage**
- **Equipment alone is not helpful, but harmful when left unsupervised**
- **Programs must include funding for administration, support, training**
- **Reduce capital equipment funding if necessary to have adequate personnel**
- **Do not fund unsupervised equipment**

Partner Teams

- **Most successful businesses involve serious partnerships**
- **Examples:**
 - **USDA / CARD**
 - **GTZ / KfW**
 - **AUA / TRDC**
 - **VivaCell / Regional education**
- **International co-operation advantages:**
 - **Safe customs and tax avoidance**
 - **Long-term professional expertise**
 - **Increased funding during recession**
- **Some domestic operatives will promote growth only if they personally benefit**

Entrepreneurship

- **Agriculture:**
 - High-quality, organic export to Europe
 - Connoisseur interest in “ancient” varieties
 - Simple agri-tourism adjuncts to existing tours
- **Domestic IT: Armenian “Geek Squad”**
- **Exported IT also possible with substantial commitment from buyer and supplier**
- **4-5x efficiency multiplier for salaries compared with US high-tech rates**
- **Capital equipment requires substantial investment to become export ready**

- **Armenia has a bright economic future**
- **Technology prices dropping but cost still relatively high to earned income**
- **Willing workforce given right opportunity**
- **Many partners willing to help**
- **Investment in Armenia experienced high net growth Jan 1 2000 to Dec 31 2009**