

An Agricultural College in Iraq as Observed By an American Soil Scientist

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Abstract

This paper describes observations by an American agricultural scientist in Iraq. Conditions and practices at Mosul University College of Agriculture and Forestry are described and contrasted to those at American colleges.

The multi-national war against Iraq focused world-wide attention on Iraq as seen through the eyes of western military and political experts. This paper describes an agricultural college in Iraq as seen through the eyes of an American soil scientist. Because an institution such as a college is best studied in context, peripheral observations are also offered. What is the state of agricultural science in Iraq, and how is it reflected in the quality and quantity of food available to the consumer? What academic pursuits occur in an Arab police-state where portraits of Saddam Hussein gaze down in every classroom and office? What and why do agriculture students study? How do faculty describe their roles, their dreams, their standing among scientists in the international community? These questions I considered during a three-week consultation to the Soil Science Department of Mosul University in May 1990, during the peaceful hiatus between the Iran-Iraq war and the Iraqi invasion of Kuwait.

Mosul University is the academic hub for about a million Northern Iraqis. Spilling onto the site of the ancient city

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College being included in this analysis. Nevertheless, the Olds program requires more contact hours than a similar 2 year program offered at Lethbridge.

The variabilities of program length between non-production programs when measured in contact hours are similar to those of the agricultural production programs, ranging from a low CV of 1.47% for three 3 year Horticulture programs offered at 2 institutions to a high CV of 12.05% for 7 two year Horticulture programs offered at 5 institutions. In no case, however, is the range between the minimum and maximum contact hours required as great as for the 2 year agriculture production programs.

Conclusions

Although the coefficients of variation between most programs is relatively low there seems to be reason for concern when the contact hour requirement of the shortest diploma in agriculture production program is barely 60 percent that of the longest program. Although such variation may not be of great concern in the local area it might create problems when employers of diploma in agriculture gradu-

ates compare programs across Canada.

Ninevah, the modern city Mosul is overwhelmingly Moslem; but, Iraq's greatest concentration of Arab Christians and Kurds lives there. The hot, dry climate reminds one of Phoenix. The dress and customs remind one of an Indiana Jones movie. The presence of heavily armed militia patrolling city streets disturbs the unsuspecting westerner. The preponderance of ten-year-old cars with cracked windshields and worn-out air conditioners attest that the war-drained economy had been burgeoning ten years ago.

The Food Situation

The state of agricultural science in Iraq in May, 1990, can be best appreciated in light of the national food situation. Barley, Iraq's principal crop, covered vast plains where farmers drove John Deere combines over short, weedless stands to harvest 400 kg per hectare (6 bushels per acre). The sheep of Bedouins followed the harvesters, grazing stubble on one farm, then another. Some barley acreage had recently benefitted from a Chinese sprinkler irrigation project. Irrigated vegetable farms were also common, often run by polygamist families with an abundant labor force.

Iraq had no western-style supermarkets, no western hamburger franchises, and a limited restaurant market with severe restrictions on female patronage. Iraqi consumers, believing chicken is "safer," reluctantly bought the staple meat (lamb) from unrefrigerated shops. Nuts, candies, spices were ubiquitous in the marketplace. Milk was imported in powdered form, or could be purchased in bottles setting out

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The great diversity of names given to programs of similar objectives could likewise create some problems when graduates move from region to region or province to province in search of employment. The question could well be asked what is the difference between "agricultural mechanization", "agricultural mechanics" and "agricultural machinery". Similarly, what is the difference between "animal science", "animal production" and "livestock production" all of which are placed in the category of agriculture production. The inconsistency of some institutions offering Agri-business programs which are geared to agriculture production whereas other institutions focus such programs towards employment opportunities in off-farm, agri-business establishments should be addressed.

Finally, it should be noted that the number of contact hours assigned to the three year agricultural production programs include a substantial number of hours generated by on farm practicums. In other cases hours accumulated during required practicums are not included. Agreement is required on how practicums should be treated when measuring time duration of programs.

in the sun; the latter often originated from buffalo, not cows. Thick, syrupy tea, Turkish coffee, Pepsi-cola, and local, light beers were drinks of choice. Fruit juice was unavailable except during a narrow window of time following fruit harvest, but a sweet, orange-flavored punch was standard fare in restaurants and on Iraqi Airways. Fruits and vegetables moved directly to market. Only warm-season vegetables, cucumber, tomato, and okra, were available in May. A typical meal tastily combined lamb, rice, tomato, and thick, round, unleavened bread. Although largely imported (1), food was plentiful. Iraqis of modest means had plenty to *eat and could spend* much of their leisure time eating.

Mosul University

Mosul University was built in 1967. With a large western-educated faculty and perhaps 20 thousand students it was the second most prestigious university in Iraq (Baghdad University is first). At the university, power flowed steeply downhill from the Texas-educated president. Even department heads approached him obsequiously. The president's wife, an American from Dallas, enthusiastically kept the university library up-to-date. Indeed, she used the only computer I saw on campus. With few exceptions, university buildings were unappealing, poorly lit, poorly repaired, and hot. The campus, lacking the green spaces associated with colleges in the U.S., appeared to be one plain, crumbling building after another, separated by patches of dried vegetation. Main campus lies just east of the Tigris in the newer part of Mosul. The agriculture campus however, is perhaps 25 to 30 km (16 to 19 miles) away. Each morning my escort picked me up at my hotel--a clean and modern high-rise, half-filled with the European and Oriental industrialists commissioned to construct the industry of Iraq. (Half of the hotel remained empty, preventing guests from viewing from their balconies the summer palace of Saddam Hussein.) Through the car stereo quivering Arab voices sparred with pan flutes in typical Middle-eastern fashion as we sped down a narrow highway. Then a new tape and Roger Whitaker crooned "feelings, wo wo wo feelings," while boys driving donkey carts filled with bottles of natural gas jerked toward Iraqi homes. Geography observed from Iraqi highways resembled the American Southwest. One could also observe military training sites, anti-aircraft positions, and occasionally a prisoner-of-war camp.

The Mosul University College of Agriculture and Forestry was patterned after American Land Grant Universities. Departments include Animal Science, Agricultural Economics, Plant Science, Horticulture, Crop Protection, Forestry, and my host, the Department of Soil Science. Owing to a successful push in the 1970's to replace the old Egyptian faculty with well-trained natives, the college was well staffed with Iraqi scientists.

The college dean, an American-educated Christian, displayed a 2 m by 1.5 m (6.5 foot by 4.5 foot) portrait of Saddam Hussein looking into a microscope. One quickly learned not to comment about such things. Iraqi scientists, perhaps afraid of the dictator's long arm, shied away from talking local politics. Iraqis preferred to discuss world poli-

tics. They spoke of American foreign policy with depth and urgency, manifesting that their stake in it was much greater than mine.

Department of Soil Science

Most soil scientists at Mosul University were educated in the U.S. and spoke longingly of their experiences in the states. Upon my arrival one said, "After all these years I just want to smell an American." One wondered how much Big Macs cost, another asked who won the Super Bowl. Iraq scientists spoke reverently of top American scientists and were surprisingly familiar with American scientific literature. Clearly, the Iraqi-American connection was strong, albeit one-sided. Just as clearly, the Iraqis wanted stronger ties still. Nearly every scientist with whom I consulted asked for help in solving some logistical problem--one wanted literature, one hoped I would perform technical analyses, another needed supplies. One made a more personal request--a pair of Levis. A few privately asked if I could help them get to the states for further studies. I sensed that they did not want further studies as much as they wanted out of Iraq.

The Soil Science Department was housed in a 20-year-old building prematurely antiquated by poor material and lack of upkeep. Storerooms were well-supplied with chemicals and glassware. Laboratories contained standard, western-made instruments that were beginning to show signs of age. The building was not air-conditioned, requiring an abrupt end to the school year in May, with no summer school. The work day began about 9:15 am and ended about 2:30 pm. Still, faculty described themselves as busy. Professors lamented conditions at the university and unfulfilling careers. The discontent was rooted largely in economics. Programs had been poorly funded. Moreover, a professor's 350 dinar per month salary had not changed throughout the long years of war. However, the official exchange rate which converted 350 dinars to \$1167 at the beginning of the war could no longer be maintained by the debt-ridden government. On the black market (which Iraqis call the white market) 350 dinars could be purchased with about \$100. I sympathized with experienced, Ph.D. scientists earning little over \$1000 per year while the immense national wealth trickled down only as far as the military. With their meager salaries, Iraqis often supported large families as their government coaxed them to repopulate the nation. One soil scientist practiced polygamy with the blessings of Islam and the Iraqi government.

The Soil Science faculty, and that of related departments (Horticulture, Plant Science) published extensively in middle-eastern journals that are hardly known in the west despite their use of the English language. The primary journal was the Mesopotamia Journal of Agriculture. Publishing in the more prestigious western journals was a goal to which the more ambitious scientists aspired. At the request of such scientists I reviewed several of their manuscripts. Generally, the papers described low-tech, applied research which would be viewed as marginally acceptable by western standards. Iraqi agricultural science was not intended to unlock the secrets of the universe, it was intended to increase food production in Iraq (2,3,4).

The most easily remedied obstacle facing Iraqi scientists was the lack of computers. There were no computers in the Soil Science Department. No word processors, no spread sheets, no statistics or graphics packages--such conditions would severely handicap American scientists. Iraqi manuscripts were sometimes hand-written, sometimes typed. Statistics and graphs were used sparingly.

Agriculture students studied or failed to study for reasons familiar to an American educator. Passing grades allowed a male to defer his military obligation. This appeared to be the strongest single motivator. Once a student entered the program his or her schedule was lock-step. Every course was prescribed. There were few general education courses and no electives. Not surprisingly, courses were similar to those the professors had taken in the U.S. and elsewhere. Some textbooks were Arabic translations of standard western texts. One course each term was taught in English, others were in Arabic. If a student failed one course he or she failed the entire year. According to the faculty, students studied only hard enough to pass, not to excel. This they blamed on the lack of tuition and book fees, but was perhaps also related to an academic pecking order. All entering students were tested and assigned a field of study based on his or her scores. Students with highest scores went to medical school. Iraq, needing physicians badly, conferred the title upon completion of an undergraduate program. Students in the second rank went to engineering school. Agriculture occupied the bottom of the list.

Although the College of Agriculture and Forestry offered graduate degrees, graduate students were rare. Upperclassmen performed minor research projects for their advisors and reported on them in department seminars. The presentations were of a quality similar to that of American colleges, but without the electronic sophistication. Most faculty attended, and the level of interest shown during the presentations far surpassed American counterparts. The faculty, genuinely interested in the research, asked many probing questions.

Nearing the close of the school year called for celebration. Cases of unrefrigerated Pepsi appeared in the main hallway. Students each got a bottle. Also, the dress code was relaxed a bit. Males who normally were required to wear black trousers and white shirts were permitted to enter the classroom wearing a shirt with faintly colored stripes on a white background. Females wore black skirts and white blouses but could get away with minor adornments late in the year.

Students seemed pleased to have an American on campus. A few spoke to me; most did not. Students, in fact, spoke to each other with restraint. Rarely did male and female students converse. I never observed any touching nor detected any flirting. Islamic law strictly forbids immoral conduct, and dating as Americans know it is nonexistent in Iraq. Students lacked the enthusiasm common among Americans. Missing was the fraternity party, the football game, the free, gamboling behavior, the curiosity, the open expression. One saw no soap box preacher, no "Save the Whales" signs--an Iraqi was not entitled to a political opinion. I asked a professor regarding the content of political science courses.

With obvious discomfort he intimated that students may study the mechanics of government or perhaps selected essays or histories.

Impressions

I left Iraq with warm feelings for a friendly, sincere people desiring the freedoms and prosperity familiar to me. They seemed to envy my ability to leave. I also left with an appreciation for the tenuous position of agricultural science in Iraq. As elsewhere, science there needs freedom, curiosity, problems to solve, and resources. Political freedom and intellectual curiosity are thorny questions with no quick fixes for Iraq. Indeed, my invitation to Iraq was a symbolic but short-lived departure from old restrictions on outside contacts. Iraq certainly has a problem to solve--it can not feed itself. Human resources were laudable, but missing were the tangible and intangible resources conducive to professional growth. If the rate of progression of science in the west is greater than in Iraq, as it appears to be, then Iraqi scientists inevitably fall further behind their western peers.

Clearly, Iraqi science relied on American literature and European hardware. Iraq relied on western and Oriental industrialists to implement technological advances. Lacking economic diversity, Iraq relied on oil revenues to fund these technological imports. One could not avoid drawing an impression from these accumulative observations: what Iraqi science (and Iraq in general) needed most was good relations with the oil-poor, technology-rich west.

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