

TAB F

# Review Comments on “Yazoo Backwater Area Reformulation”

Prepared for the USEPA, Region IV, Atlanta

Leonard Shabman and Laura Zepp  
Department Agricultural And Applied Economics  
Virginia Water Resources Research Center  
Virginia Tech  
Blacksburg VA 24061-0401  
September 24, 2000

## Background

The Corps' Environmental Impact Statement and reformulation report (EIS) titled “Yazoo Backwater Area Reformulation” reports a National Economic Development (NED) benefit to cost ratio of 1.44 (properly excluding employment benefits) for their recommended plan (Plan 5). This ratio is calculated as the total amount of annual NED benefits (\$21.5M) divided by the total annual costs of Plan 5 (\$14.9M). Annual benefits are the annual equivalent value of the NPV of total benefits over the 50-year study period. Net annual NED benefits are reported as \$6.6M.

Table 15 of the Main Report shows that agricultural crop benefits account for over 67% of the total annual project benefits (\$14.6M agricultural crop benefits out of the total \$21.5M project benefits). We also note that the ownership of the farmed land is in large tracts and held by few landowners in the region (EIS Economics Appendix page 7-14). Benefits related to agricultural crop production and reforestation (including agricultural non-crop damages, hunting leases and catfish farms) constitute another 16.5% of the benefits. As a result, benefits for protection of structures, roads and bridges, urban streets and avoided emergency costs and Federal Insurance Administration administrative costs constitute only 15.6% of the total benefits. Therefore, *despite the strong implication in the text of the report that the proposed project is motivated by the need to protect scattered homes and business, this plan is formulated principally to protect the owners of farm land from predictable and minor seasonal flooding.*

In addition, we question the underlying policy rationale for such a project. To the extent the project provides any benefits, those benefits accrue to crops that the United States taxpayers now provide with subsidies in the form of premium subsidies for crop insurance and in the form of cash payments that continue even within the framework of farm program reforms made in the late 1990s. We note that this project's plan to support continued farming of what will remain highly flood prone lands in the lower elevations of the watershed (with the project in place) ignores the national commitment to encouraging land owners to withdraw such land from production under USDA and associated state programs. For these reasons, we note that *asking federal taxpayers to spend the funds*

*requested for this project is inconsistent with national farm policy and forgoes significant opportunities for environmental enhancement as described in the Shabman and Zepp report that was reproduced in the EIS at Appendix 17.*

Finally, even ignoring the policy inconsistency of seeking funds for this proposed project, we conclude that the reported analysis of benefits and costs fails to demonstrate that the project is economically justified. In these comments we will demonstrate that the nation (and the agricultural landowners) will not receive the benefits claimed in the project report. Several errors are found in the Corps' analysis that result in overstated estimates of agricultural benefits. We will document these errors and their implications for project justification in the following sections.

## **Failure to Fully Disclose the Analysis**

Before offering the comments on the reported analysis, it is important to note that *the EIS has a significant disclosure problem*. In the Economics Appendix of the EIS (Appendix 7), the Corps demonstrates their methods for evaluating agricultural crop flood damages and benefits using one of the structural alternatives initially considered (and ultimately rejected) in the first set of alternatives. The reported results are for agricultural benefits using old, 1994, data and a 7-5/8% discount rate. However, the report later states that the recommended plan, along with the other alternatives included in the final set of alternatives considered, was evaluated using 1999 production costs and prices and a 6-5/8% discount rate. The 1999 data analysis is nowhere in the economics appendix to the report. The failure to report the 1999 data is defended with the argument that the relative ranking among alternatives will not be altered by using the updated data.

We do not agree with this argument, but more important than the relative difference between plans, is the absolute net benefit of each plan. It is possible that the absolute net benefits of the selected alternative may not exceed zero when the 1999 data are properly analyzed. The Corps does not provide the most current data used in evaluating the recommended alternative, including the 1999 crop prices, production costs, number of acres affected by the project by reach and stratum, per acre flood damage estimates by reach and stratum, cropping mix (pattern) by reach and stratum, days of planting delay associated with different flooding regimes with and without the project and replanting costs for flooding. These and other failures to disclose relevant information are discussed in greater detail in the final section of these comments. *The Corps report is wholly inadequate as a disclosure document and fails to meet that most basic requirement of an EIS.*

## **Errors and Biases in Agricultural Benefit Calculation**

Despite the Corps failure to document the 1999 data inputs and current calculations used to evaluate the benefits of the recommended plan, we are able to comment on the Corps' methods of calculating agricultural benefits using the old, 1994 data inputs. The

comments below are based on the 1994 data and calculations used in the Corps' evaluation of one of the structural alternative considered early on in the reformulation process.

Error 1: Intensification benefits can not be justified

Agricultural benefits provided by a pump equal the difference between agricultural returns, adjusted for flood damages, with- and without- the pump. The larger the gap between "with" and "without" project agricultural returns, the higher the estimate of benefits (as prevented damages) provided by the pump. However, the Corps assumes that flood-free per acre net returns would be higher with the pump project than they would be without the pump even when the pump is not operating. This means that, agricultural benefits are earned with the pump, even before the benefits of forgone flood damages are accounted for. These intensification benefits are claimed to come from changes in land use and use of better management practices.

Figure 1 illustrates, the intensification assumption made by the Corps using the flood-free, per acre composite net return for the lower stratum of reach one as reported for the 1994 data. This composite net return equals the average of the net returns for all crop types in the lower stratum of reach one, weighted according to crop distribution. As is shown in Figure 1, in the base year (2006), an increase in flood-free returns with- versus without- the project of \$7.94 is triggered by the presence of the pump. The Corps calculates total intensification benefits as 47.7% of the total difference between annual net returns with- and without- the project. This is a 37% increase in flood free net returns attributable to pump construction in the base year.

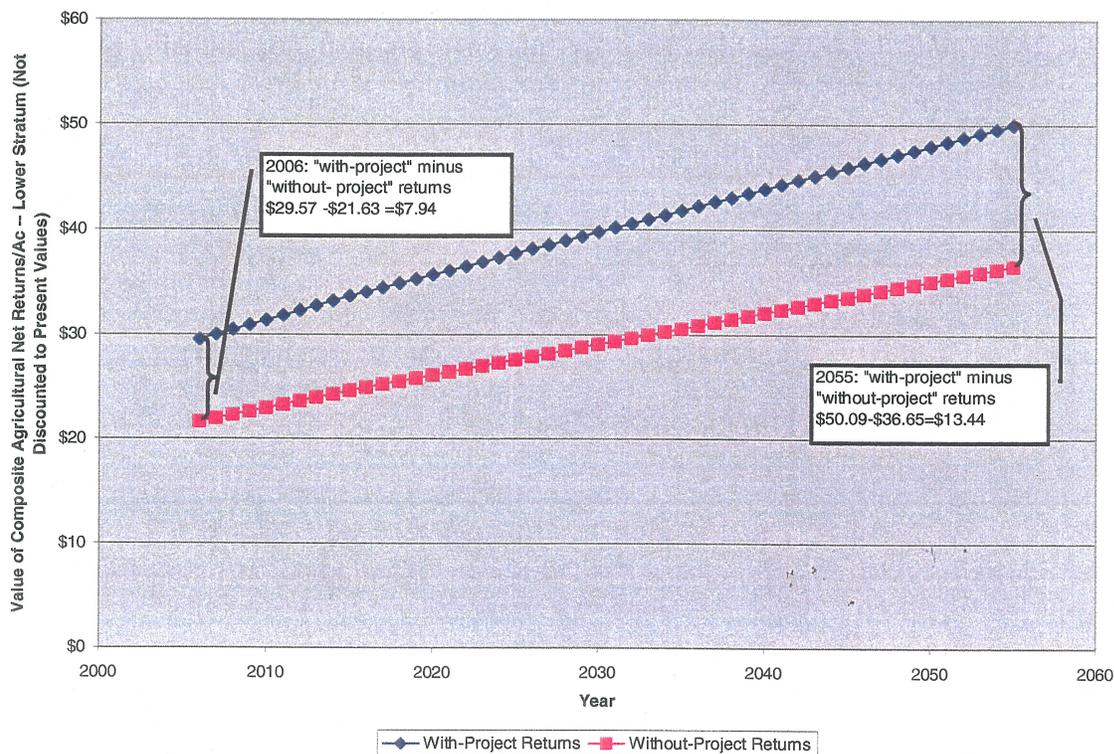
It should be noted that the with-project, flood free net returns estimate, is actually a weighted average of the net returns earned on farmed wetlands and the returns earned on nonwetland acreage, as reported by the Corps. The Corps applies the higher, with-project flood-free returns only to nonwetland acreage (18,365 acres in reach one / lower stratum). It is assumed that farmed wetland acreage (11,847 acres in reach one / lower stratum) will not receive the same intensification benefits and is multiplied by the without-project, flood free net return. As a result, the with-project, flood-free composite return plotted in Figure One is a weighted average of the per acre net returns applied to nonwetland acreage (\$29.91) and the net returns applied to farmed wetland acreage (\$18.85).

*We reject the Corps claim of "intensification" benefits.* We did not find in the Shabman and Zepp study (fully documented and reproduced in Appendix 17 of the EIS) that there will be significant enough of a change in hydrology to prompt the claimed change in land use. For the crops in question; soils, prices and farm subsidy policy matter far more in the choice of crop planted than does the modest change in flood risk that would result from the pump. Also, if intensification is said to be due to improved management practices, our research suggests that once landowners get the crop in, they employ best management practices because of the availability of crop insurance and because the possibility of late season flooding is remote. Therefore, the presence of a pump will not prompt improved management practices.

## Error 2: Flawed projections result in overstated agricultural benefits

We note that the Corps projects future growth in agricultural benefits by applying the same projection factors to both the with- and without- project net returns. Because the initial with-project flood-free returns are higher than the initial without-project flood free returns (partly as a consequence of the unwarranted intensification benefit claims), when the same projection factors are applied to both, the gap between returns with- versus without- the project increases each year. This result is illustrated in Figure 1. The benefits in the base year (2006) equal \$7.94/acre, the difference between the with-project returns of \$29.57/acre and without-project returns of \$21.63/acre. In 2055, the final year of the analysis, the distance between with- and without- project returns has increased to \$13.44/acre, the difference between the projected with-project returns of \$50.09/acre and the projected without-project returns of \$36.65/acre. The projected values shown in Figure 1 are not discounted to present values. Although the future benefits are diminished when discounted to present values, they are still higher with the Corps' projections, than they would be without any projections.

**Figure 1: Projected Growth of Agricultural Composite Lower Stratum Flood Free**



The final step taken by the Corp to calculate agricultural benefits is to adjust the with- and without- project net returns for flood damages. The without project flood damage adjustment is calculated by multiplying the estimated per acre flood damages under the without-project condition by the number of cleared acres flooded annually, on average,

without the project. Similarly, flood damages for the with-project condition are calculated by multiplying the average annual acres flooded with the project in place, by the estimated per acre with-project flood damages. As was mentioned previously, the with-project flood-free net returns are actually a weighted average of the Corps estimate of net returns earned on farmed wetlands and the net returns earned on nonwetland acreage. Similarly, the flood-adjusted net returns illustrated in Figure 2 and discussed in this text are also a weighted average of the flood-adjusted returns on farmed wetlands and nonwetland acreage.

The without-project flood damage adjustment is larger than the with-project flood damage adjustment. This is true, despite the fact that the per acre flood damages are higher with the project in place. Because the Corps estimates higher flood free net returns with the project in place, the costs of losing a crop to flooding are also higher with the project in place. This means that, on the acreage that is flooded with the project in place, the flood damages are higher than they would be without the project in place. Nevertheless, the total flood damage adjustment is lower for the with-project scenario because the number of average annual acres flooded is lower with the project in place. This means that the higher, with-project per acre flood damages are multiplied by the lower number of average annual acres, with the project. The decrease in average annual flooded acres with the project is sufficiently large to offset any increase that occurs in per acre flood damages.

Conceptually, this adjustment for flood damages can be correct. The likelihood and extent of flood damages without a project will be greater than flood damages with a project. As a result, the without-project net returns are reduced a greater amount by flooding than the with-project returns. This result is illustrated by applying the Corps' flood damage adjustment, converted to per acre terms, (see Figure 2) to the with- and without- project net returns reported in Figure 1. After subtracting out the effects of flooding, agricultural benefits for the pump (the difference in flood adjusted with- and without- project returns) is \$27.06 in the base year (2006) and \$45.84 in year 50 (2055) for this illustration.

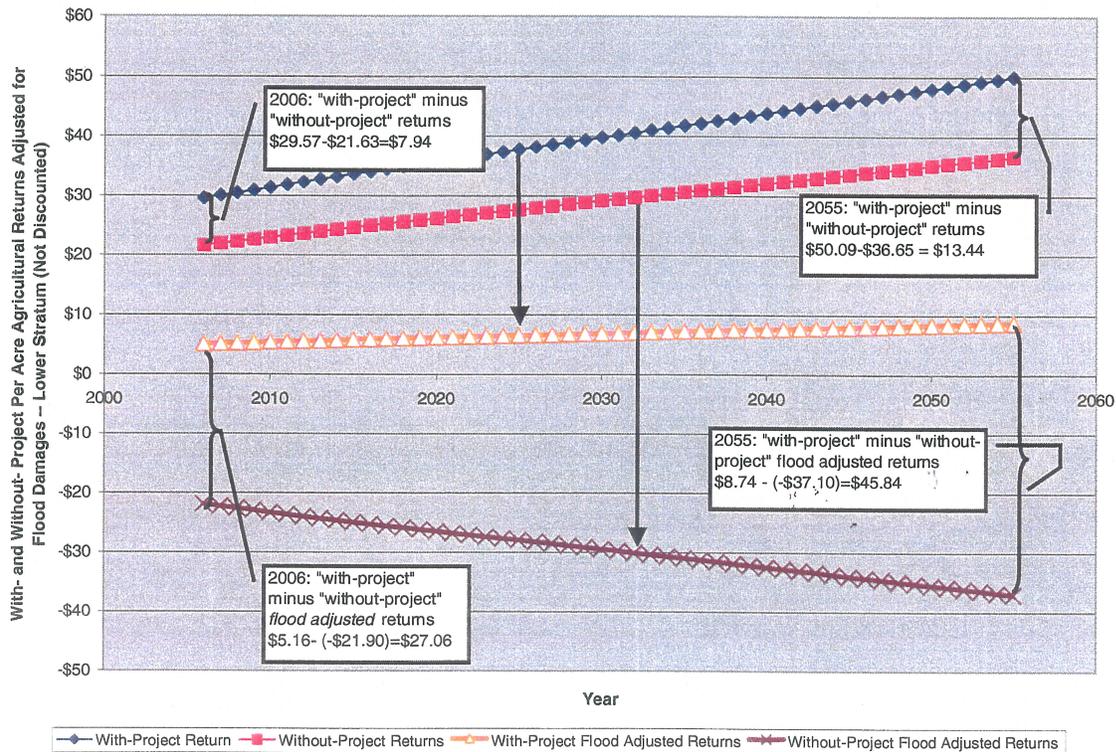
In constructing Figure 2 we discovered some rather curious results reported by the Corps for 1994. Note that per acre without project net returns, accounting for flooding, are negative \$21.06 in the base year. Once the project is in place the net returns per acre only rise to \$5.16 per year. This is a trivial return to farming in this region. While the gap between with- and without- project net returns of \$27.06 (growing to \$45.84) does result in calculations of positive net benefits for flood control, the numbers raise a question: if the land is losing money each year, and with flooding will only earn \$5.16 per year, why is the land being farmed at all? One possibility is that the NED returns truly are negative at worst and trivial at best. In this case the land would continue to be farmed to reap farm program benefits. *If this explanation of the net return results is correct then the proposed project will spend federal money to help landowners grow crops on land that is farmed only to earn farm subsidy payments.* An alternative explanation is that the net return numbers are wrong. *If the net return results found in EIS are in error, then why did the Corps use the results to compare alternatives?* Of course, we cannot be sure that

these questions would apply to the 1999 analysis that the Corps says was used, because that analysis is not provided in the EIS.

Returning to the discussion of projections, we also note that the negative returns numbers get even more negative with time. However, because of the projections the Corps applies to the agricultural flood benefit calculation, the gap between with- and without-project net returns expands over the life of the project, inflating the benefits that arise each year. We do not dispute that the Corps is permitted by their planning guidelines to include projections of future trends into their calculation of agricultural benefits. Clearly, however *projections used can make a significant difference in the net benefit results obtained. Therefore, attention to proper projection methods is essential to a credible benefit cost analysis.*

The Corps made its projections using an equation that relates time to the crop sales per harvested acre in the Yazoo Basin. (See Table 7-38, pg. 7-90 of Corps EIS.) However, historical and projected growth in crop sales does not provide any information about future changes in the *costs* of production, rather only describes change in agricultural revenues. The use of crop sales as the basis for projecting future net returns (i.e. crop

**Figure 2: Adjusting Composite Lower Stratum Net Returns/Ac. for Flood Damages Net Returns/Ac With- and Without- Project**



sales – production costs), fails to adequately represent future changes in production costs that could diminish the growth rate of projected net returns. Furthermore, projecting

growth rates based on historical crop sales produces estimates of increasing growth rates that contradict present trends and USDA projections of falling real prices.

Instead of providing a single projection rate for agricultural benefits, each of the individual elements of agricultural returns (ie. commodity prices, production costs and yields) should be projected independently and reported separately. By providing a single, aggregated projection rate, it is impossible to isolate and evaluate the Corps' assumptions regarding future changes in commodity prices, production costs and yields.

After separating out the projections of yields, commodity prices and production costs, the Corps projections should be compared with other available projections, as a quality check. For example, the Food and Policy Research Institute (FAPRI) produces an annual report including projections of future crop prices, production costs and yield trends. The FAPRI projections are based on a series of assumptions about future domestic and international macroeconomic and policy conditions described in detail on pgs. 53-54 of the Shabman and Zepp report included in Appendix 17 of the Corps' EIS. FAPRI projections serve as the baseline commonly used by USDA for its policy analyses (FAPRI, 1998)

It is impossible to provide a complete critique of the Corps' projections because the agency did not disclose its 1999 databases and assumptions. Nonetheless, even a cursory examination suggests that the Corps' aggregate projection factors may be overly optimistic.

The Corps' projects an uninterrupted, linear growth in agricultural benefits throughout the upcoming 60 years (1996 – 2055). When applied to the 1994 estimates reported in the EIS, the Corps' projections suggest an increase in lower stratum flood free net returns to agricultural production from the assumed current year (1996) to the final year of the analysis (2055) of over 96% under the without-project conditions (from \$18.65/acre in 1996 to \$36.63/acre in 2055). Since the Corps assumes that 75% of the lower stratum / reach one is comprised of soybeans (61%) and cotton (14%), it seems likely that the majority of the 96% increase in the composite net return can be attributed to increasing soybean and cotton net returns. The 96% increase is an inflation-free increase in net returns projected by the Corps.

Table 1 reports the percentage change in real soybean prices and variable soybean production costs for the Delta states over a ten year period (2000 - 2009) as projected by FAPRI. As shown in Table 1, current, inflation-adjusted FAPRI projections of agricultural prices do not suggest increasing real prices for soybeans. While FAPRI projections do show a decline in real production costs for soybeans, it is a small percentage decline that is likely not large enough to offset decreasing commodity prices.

**Table 1: FAPRI projections of Soybean Prices and Production costs**

	Percentage change in FAPRI projections of Soybean Prices and Production Costs from 2000 to 2009
--	---

<b>Soybean</b>	
Prices	8.8% decrease (increase in nominal terms)
Variable Production Costs	9.6% decrease (increases in nominal terms)

\*The projected FAPRI prices are adjusted for inflation and expressed in year 2000 dollars, using the GDP index found in the USDA February 2000 Baseline Projections.

As an example, consider the lower stratum, 1994 per acre returns to soybean productions reported in the EIS. The 1994 soybean returns are calculated as follows:

Current Soybean Net Returns / Acre = Price \* Yield/Ac – Production Costs

**Soybean Net Returns / ac** = \$13.75, the current value of soybean returns  
**Price** - \$6.16/bu, the FY 1994 per bushel price of soybeans  
**Yield** – 20.4 bu/ac, the Corps’ estimate of per acre soybean yields (20.4 bu/acre)  
**Production costs** – \$111.91/ac, the 1994 estimates of soybean production cost / acre

Per acre returns to soybean production fall from the value of \$13.75 to a total of \$13.47/ac after applying the FAPRI projected 8.8% decrease in soybean prices and 9.6% decrease in soybean production costs, as shown below.

Soybeans Net Returns after = Price \* Yield/Ac – Production Cost  
Applying FAPRI projections

**Soybean Net Returns / ac** = \$13.47, the projected of soybean returns  
**Price** - \$5.62/bu, projected per bushel price of soybeans  
**Yield** – 20.4 bu/ac, the Corps’ estimate of per acre soybean yields (20.4 bu/acre)  
**Production costs** – \$101.17/ac, the projected soybean production cost / acre

While the decrease in projected soybean returns is small in this example, it certainly does not support the Corps projections of increasing net returns. Given the future trends in production costs and prices suggested by the FAPRI projections, it is not clear that the 96% increase in real (inflation adjusted) net returns projected by the Corps in their analysis can be accounted for by either increasing soybean prices or decreasing production costs. It appears equally as likely that future changes in production costs and prices could result in declining net returns. *In order to project future changes in agricultural benefits, the Corps should project each element of agricultural returns separately. Failure to make projections with proper procedures can result in significant misstatements of benefits.*

Error 3: Benefits for reforested land are misstated

Table 15 on pg. 88 of the Corps’ main report shows an annual value of \$2.96M for “Non Structural Agricultural Crop” benefits. This benefit category is for the flood damages eliminated on the land reforested below 87’ elevation. The Corps describes this benefit calculation as reduced insurable flood losses. This calculation is a proxy for flood

damages eliminated when reforesting agricultural lands subject to periodic flood damages.

As is recognized in the *Principles and Guidelines* that govern federal water resources planning, and as affirmed in Corps planning guidance, reduced flood damages are not a benefit from a change in agricultural flood plain land use. The professional economic logic for this prohibition is sound. When prospective flood damages are well recognized by land markets (as is the case here) then the prospect of flooding reduces the cost of purchasing flood prone land in fee simple or as an easement. When the Corps includes the cost of easements in its cost calculations for the project, the prospect of flooding has already reduced the costs of acquiring the easements on flood prone properties to account for these expected damages. Flood damages reduce project costs by reducing the costs of purchasing easements. This means that by including estimates of flood damage reductions on reforested lands as a benefit category, the Corps is double counting the value of the reduced flood damages, first in lower easement costs and then again as a benefit category. This mistake is not made in the Shabman and Zepp report included as Appendix 17 when they evaluate the non-structural plan. *For this reason we conclude that the EIS has overstated the annual benefits of the recommended plan by \$2.96M, based on this mistake alone.*

If the \$2.96M annual benefits from reduced flood damages on reforested lands are eliminated, the total benefits for the Corps' recommended plan are reduced to \$18.5M and the benefit / cost ratio is falls to 1.24. This revised estimate of project benefits exceeds project costs by \$3.66M. If agricultural benefits are overstated by this amount, without even considering the possibility that other benefits are overstated or that costs are understated, then the project fails to be NED justified. As we now argue, we believe that NED agricultural benefits are significantly overestimated.

Error 4: Avoided damages (agricultural benefits) are overstated

As was noted, the 1999 data that was said to be used to calculate the agricultural benefits of the recommended plan were not provided in the EIS. However, a recent, complete set of agricultural data was provided to us by the Corps in a memo dated March 24, 1999 and confirmed in an e-mail message dated September 14, 1999. The data in the Corps' memorandum of March 24, 1999, provided us with their 1997 data inputs, more recent than the 1994 data included in the EIS. Although the Corps did not include the 1999 agricultural data used in its report, we were able to use the Corps provided 1997 data for an assessment of the credibility of their agricultural benefits evaluation. *We conclude from our evaluation of the 1997 data provided to us by the Corps that the agency made significant errors in its agricultural flood damage reduction benefit calculations.* Our basis for this conclusion (also found in the EIS at Appendix 17) follows.

As was noted, in March 24, 1999 the Corps provided their then most current --1997 -- estimates of crop prices, yields and production costs. In the Shabman and Zepp report (shown in Appendix 17 of the Corps EIS) an analysis of the soybean and cotton net returns provided in the 1997 data set suggested that the Corps' estimates of net returns are too high. If the net returns are too high then all of the resulting benefit calculations

will be overstated because the avoided damages will be overstated. We draw the conclusion that net returns are overstated by making a comparison of capitalized net returns with prevailing land prices.

Because the lower Yazoo Basin is dominated by agricultural land uses and there is little prospect of other forms of development, the Shabman and Zepp report hypothesized that the capitalized future value of per acre net returns to agricultural production should produce a close estimate to actual land values in the area. We realize that as an NED measure the Corps' estimates of agricultural returns should not include any form of government transfer payment, which would act to increase actual land prices in the Yazoo Basin. Similarly, to the extent that landowner expectations of the construction of the pumps project may have increased land prices in the Yazoo Basin, the capitalized agricultural returns would not reflect that increase. As a result, if the 1997 Corps estimate of net returns were accurate we would have expected the capitalized net returns to fall somewhat short of actual land market prices. There are also factors that could act to depress agricultural land values, such as the lack of liquidity in land as an asset, that would not be captured in the capitalized land prices. On balance, however, the expectation is that the agricultural net returns reported by the Corps', when capitalized, should approximate, or fall short of agricultural land values in the area.

The Shabman and Zepp report capitalizes the Corps' flood-free, without-project estimates of per acre soybean and cotton returns using a 6-7/8% discount rate. The results are reported in Table 2 as a range of flood-free, without-project capitalized soybean and cotton returns. The lower end of each range is the capitalized lower stratum net returns and the upper end of the range is the upper stratum capitalized net returns. The first column of Table 2 reports the capitalized value of the Corps' current year (1997) net returns, while the second column reports the capitalized value of the Corps net returns after incorporating the Corps projections of future growth in agricultural benefits.

In the upper strata, contrary to what should have been the case, the capitalized net returns for soybeans exceed the market price for land. With projections the capitalized soybean returns exceed the land market price in the upper strata by a significant amount. Even more strikingly, all of the Corps's estimates of cotton returns, from both the lower and upper stratum and both with and without projections, exceed market prices for cotton land by a substantial amount. At the extreme, capitalizing the Corps' projected cotton returns in the upper stratum produce estimates of land prices of over \$5,000 per acre, while \$1,300 is the highest land market price reported by the Land Bank in Sharkey County. From this, the Shabman and Zepp report concludes that *the 1997 Corps estimates of soybean and cotton returns cannot be reconciled with the land price data. The returns are overstated and so too will be the benefits of the project.*

**Table 2: Comparison of Corps' Capitalized Soybean and Cotton Net Returns With Federal Land Bank Prices**

Crop Type	Land Price based on Corps' Capitalized Net Returns (no projections)	Land Price based on Corps' Capitalized Net Returns (with projections)	Land Market Prices*
-----------	---	---	---------------------

Soybeans	\$ 354 - \$1405	\$ 432 - \$1716	\$400/ acre (Class III and IV, frequently flooded) - \$600 (Class III and IV)
Cotton	\$1486 - \$4,325	\$ 1815 - \$ 5,281	\$ 750 (class III) - \$1,300 (class I)

\*Source: Federal Land Bank Prices reported in (Black, Robert, Unsworth, Robert and Marieke Ott. *Considerations in the Pricing of Flowage Easements: A Case Study of Non-Structural Flood Control in the Big Sunflower River Basin*. Industrial Economics, Incorporated: Cambridge, MA, October 1997.)

## Correcting for Errors: On the NED agricultural benefits of a Pump project

In the Shabman and Zepp report we not only critically evaluate the Corps estimates of net returns, but we also made our own estimates and use the same land price comparison logic to confirm the validity of our estimates. As can be seen in examining the results in Section 5 from that report the Shabman and Zepp net returns, after using projections from FAPRI, were consistent with the land price data.

With confidence in the accuracy of the Shabman and Zepp net returns, we estimated the agricultural benefits for a pump project. We used the hydrologic record provided to us by the Corps. We used the net returns data that we tested and found valid. We used a stage area flooding relationship provided to us by the USGS to establish the acres flooded and the frequency of that flooding. We combined all of these data in a model that replicates the calculations of the Corps CACFADAS model. In conducting the evaluation of a pump we assumed that the pump eliminated all of the effects of flooding on the landscape. Details of this analysis can be found in the report included in the EIS at Appendix 17. Under these conditions *we found that agricultural flood damage reduction benefits for a pump would be approximately 25 million dollars in net present value -- far below what would be necessary to NED justify such a project, even accepting all of the other benefit claims and the reported costs presented in the EIS.*

## Conclusion

Even though the EIS goes to some length to suggest that the most important benefits are to structures, we note that agricultural benefits of the pump are still critical to the justification of the project. We also note that the benefits for the non structural element of the proposed plan are incorrectly reported. However, of special significance is that the agricultural benefit estimation is poorly explained and, where the explanation can be understood, there are technical errors. When these errors are corrected the net NED benefits for the proposed plan become negative. This result was reported and defended in Section 5 of the Shabman and Zepp report.

In its response to the Shabman and Zepp report (Section following Appendix 17 in the report) the Corps did not even address our demonstration that the benefits of the pump project were overstated. The response only claims that the Corps work was internally reviewed. There is no information on the nature of that review, who did the review or what it concluded. No copy of any review is provided in the documentation. *An independent technical review of the economic analysis is in order and has not, according to the EIS, been accomplished.*

A nonstructural approach as defined in the Shabman and Zepp report remains a viable option. The comments offered by the Corps on the Shabman and Zepp report do not in any way undermine the logic or the technical merit of the analysis contained in that report on an alternative approach. The comments either do not speak to the technical merits of the analysis or make points that, if correct, would not be critical to the justification offered for the approach, either as an NED project or as being justified under the Corps own internal guidelines on ecosystem evaluation. We do recognize that there will need to be a new multi-agency partnership to implement such a plan, but *landowners and citizens of the region, the national economy, the environment and the federal budget are all better served by a new look at new approaches.*