

1 **Designing a Model of Planned Management Behavior for Consequences**  
2 **of Climate Change in Iran's Agriculture**

3 **Abdolwahed Kaabi, Kouros Rosta<sup>1\*</sup>, Saeed Mohammadzadeh<sup>2</sup>, and Reza**  
4 **Baradaran<sup>3</sup>**

5 **Abstract**

6 Climate change in Iran in recent years has caused a decrease in rainfall and an increase in  
7 temperature and continuous droughts. Agricultural production in Iran has been affected by  
8 climate change and has faced a decrease in the production of various products. Therefore, it is  
9 necessary to use strategies for managing the consequences of climate change. The purpose of  
10 this research was to designing a model of planned management behavior (MPMB) for  
11 consequences of climate change in Iran's Agriculture. A mixed method was used in this  
12 research. The study sample of qualitative phase included 25 key experts and in the quantitative  
13 section, there were 100 experts. Based on the qualitative results, the consequences of climate  
14 change were identified. In the quantitative phase, it was determined that 69.3% of attitude  
15 towards the consequences of climate changes are explained by the concerns about social,  
16 economic and environmental consequences, feeling the need for risk management, and  
17 perceived value. Also, 71.2% of changes in planned management intention to control the  
18 consequences are affected by the attitude towards the consequences, tendency to control  
19 behavior, personal and mental norms. Finally, 69.8% of changes in PMB for control the  
20 consequences of climate changes are caused by the use of planned management intention to  
21 control the consequences, action planning and coping planning. The results of this research will  
22 make a significant contribution to planned management to control the consequences of climate  
23 change in the agriculture sector and pave the way for future research in the field of controlling  
24 the consequences of climate change.

25 **Keywords:** Attitude, Climate Change, Khuzestan, Planned Management Behavior.

26 **Introduction:**

27 Climate change is a phenomenon that is happening in most parts of the world, including Iran  
28 (Karimi et al., 2018). This phenomenon has very wide consequences. As one of the biggest  
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<sup>1</sup> Department of Agricultural Extension and Education, Birjand Branch, Islamic Azad University, Birjand, Islamic Republic of Iran.

<sup>2</sup> Department of Agricultural Extension and Education, Agricultural Sciences and Natural Resources University of Khuzestan, MollaSani, Ahwaz, Islamic Republic of Iran.

<sup>3</sup> Department of Agriculture and Plant Breeding, Birjand Branch, Islamic Azad University, Birjand, Islamic Republic of Iran.

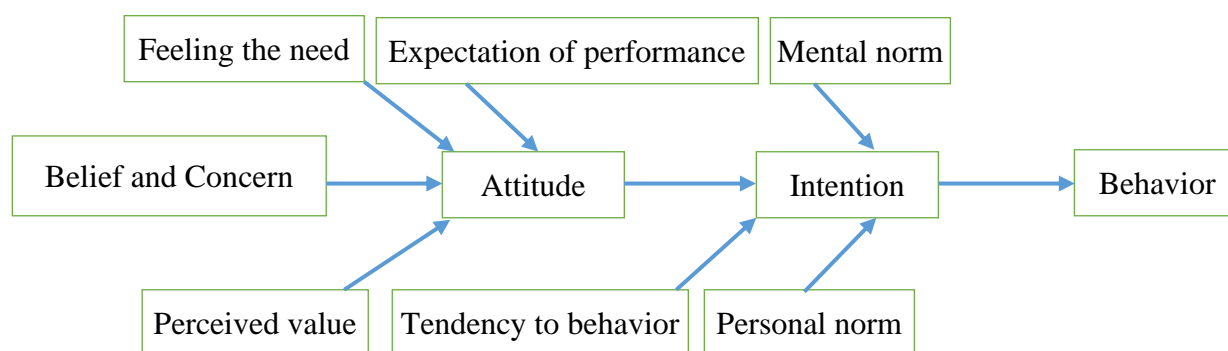
\*Corresponding author; e-mail: roustakouros@gmail.com

30 global challenges, climate change has wide-ranging effects on different parts of human life  
31 (Ghalibaf et al., 2023). Among the sectors that are directly affected by these changes are  
32 agriculture and food security (Rajabalinejad et al., 2024). Considering the importance of these  
33 issues, investigating the effects of climate change on agriculture and food security is of  
34 particular importance. The increase of greenhouse gases, mainly carbon dioxide gas, increase  
35 in temperature and decrease in precipitation are among the components of climate change that  
36 have had destructive effects on the agricultural sector (Karimi et al., 2018). This alarming  
37 phenomenon will change the performance of crops and overall production in the agricultural  
38 sector in the future (Vathaghi and Ismaili, 2008). Knowing the social, economic and  
39 environmental consequences of this sinister phenomenon is very important. Based on the  
40 results of the study by Malkoutikhah and Farajzadeh (2019), it was found that fluctuations or  
41 differences from the average of temperature and rainfall variables have a significant effect on  
42 the production of the agricultural sector. Also, the results of the research of Vathaghi and  
43 Ismaili (2008) showed that the increase in temperature and decrease in rainfall until the next  
44 100 years (due to the increase in greenhouse gas emissions) will cause a 41% decrease in the  
45 yield of wheat cultivation in Iran. The effect of climate change on the agricultural sector is  
46 more than all other sectors (Karimi et al., 2018). Therefore, the necessity of increasing food  
47 security along with reducing the risks of climate change requires a transition to a system of  
48 agricultural production that has higher productivity, more efficiency per unit of input  
49 consumption, higher flexibility to long-term changes and stable against risks and turbulences  
50 (Hertel and Lobell, 2014). More productive and sustainable agriculture seeks to make changes  
51 in the use of land, water, nutrients, soil and genetic resources in order to improve the  
52 productivity of these resources (Mansouri Daneshvar et al., 2019). Obviously, achieving such  
53 a system will require significant changes in national and local policies and mechanisms  
54 (Thornton, 2014). Several models are used regarding technology acceptance and behavior  
55 prediction in different fields. In this research, the theoretical framework of the research is based  
56 on the Theory of Planned Behavior (TPB) and Belief and Concern Theory (Bamberg, 2003 and  
57 Ajzen, 2005). TPA assumes that a person's behavioral intention is predicted by three key  
58 components: attitude toward the behavior, mental norms, and perceived behavioral control.  
59 These three predictors significantly cooperate to explain behavioral intention in a range of  
60 behavioral domains. Bamberg, 2003 also points to belief and concerns. Based on them, the  
61 theoretical framework of the research is shown in Figure 1. The novelty of this research is that  
62 no research has been conducted in the study area on planned management behavior in the field

63 of managing the consequences of climate change in the agricultural sector. Therefore,  
 64 conducting this research will greatly contribute to completing the body of knowledge in this  
 65 field. The phenomenon of climate change and the spread of dust in the areas that have  
 66 encountered it have resulted in a 20 to 30 percent decrease in the quantity and quality of  
 67 agricultural products. According to a report by the Ministry of Agricultural Jihad, climate  
 68 change has caused 200 trillion tomans, equivalent to 2 billion and 757 million dollars (\$1 = 70  
 69 thousand tomans) within a year, to damage the agricultural sector of Iran (Mehr News Agency,  
 70 2024). In previous research, none of them had addressed the identification of the consequences  
 71 of climate change on the agricultural sector through a qualitative method. In addition, none of  
 72 them had paid any attention to designing a planned management behavior model to control the  
 73 consequences of climate change.

74 The research objectives as followed:

- 75 1) Identifying consequences of climate change in agriculture sector.
- 76 2) Identifying factors affected on attitude towards social, economic and environmental  
 77 consequences of climate change.
- 78 3) Identifying factors affected on planned management intention of controlling  
 79 consequences of climate change.
- 80 4) Identifying factors affected on the behavior of planned management of consequences  
 81 control of climate change.

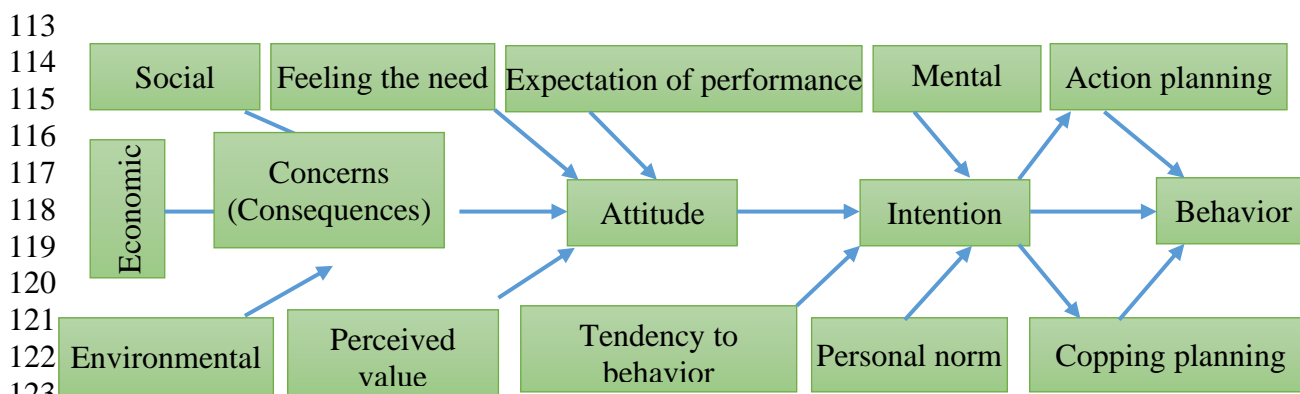


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89 **Figure 1.** Theoretical model of the research.

## 90 Methodology

91 This research is an applied and non-experimental type of research. In this research, two  
 92 qualitative and quantitative paradigms have been used. The purpose of this research is to  
 93 identify the consequences of climate change and designing a model that controls the  
 94 consequences through planned behavioral management. The research plan consists of two  
 95 parts, in the first stage, the qualitative paradigm is used ( $n_1=25$ ), and in the second stage, the

96 quantitative paradigm is used ( $n_2= 100$ ). In the qualitative research paradigm, interviews with  
 97 experts and brainstorming were used, and in the second stage, in the quantitative research  
 98 paradigm, the descriptive research method and the structural equation model were used. Face-  
 99 to-face interviews and brainstorming methods were used to extract concepts, subcategories and  
 100 categories in the qualitative part. The study sample of this research in the qualitative phase  
 101 included key experts who have knowledge of the consequences of climate change in Khuzestan  
 102 province, which included: 10 university faculty members and 15 agricultural managers.  
 103 Qualitative data collection continued until theoretical saturation was reached. The analysis  
 104 steps in the qualitative section include three types of coding (open coding, axial coding and  
 105 selective coding). The statistical population in the quantitative part included the experts of  
 106 agricultural Jihad of Khuzestan province. The number of statistical sample was considered to  
 107 be 100 people according to Morgan's table. In order to validate the presented model,  
 108 confirmatory factor analysis has been used in the framework of the structural equation model.  
 109 Smart PLS3 software was used for quantitative statistical analysis. Based on the theoretical  
 110 framework (Bamberg, 2003 and Ajzen, 2005) of the research and based on the opinion of the  
 111 experts, the conceptual framework of the research was designed, which is presented in Figure  
 112 2.



124 **Figure 2.** Conceptual model of the research.

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 126 Based on the conceptual model of the research, the hypotheses of the research are:

127 H1: Understanding the social consequences has a significant effect on the attitude towards the  
 128 consequences.

129 H2: Understanding the economic consequences has a significant effect on the attitude towards  
 130 the consequences.

131 H3: Understanding the environmental consequences has a significant effect on the attitude  
 132 towards the consequences.

133 H4: Feeling the need for risk management has a significant effect on the attitude towards social,  
134 economic and environmental consequences.

135 H5: The perceived value has a significant effect on the attitude towards social, economic and  
136 environmental consequences.

137 H6: Expectation of performance has a significant effect on attitude towards social, economic  
138 and environmental consequences.

139 H7: The attitude towards social, economic and environmental consequences has a significant  
140 effect on the planned management intention to control the consequences.

141 H8: The tendency to control behavior has a significant effect on the planned management  
142 intention to control the consequences.

143 H9: Personal norm has a significant effect on planned management intention to control  
144 consequences.

145 H10: Mental norm has a significant effect on planned management intention of controlling  
146 consequences.

147 H11: The intention of planned management of consequences control has a significant effect on  
148 the behavior of planned management of consequences control.

149 H12: The intention of planned management of consequences control has a significant effect on  
150 the action planning of applying the planned management of consequences control of climate  
151 change.

152 H13: The intention of planned management of consequences control has a significant effect on  
153 the coping planning of planned management of consequences control of climate change.

154 H14: The action planning of applying the planned management of consequences control has a  
155 significant effect on the behavior of the planned management of consequences control.

156 H15: The coping planning of planned management of consequences control has a significant  
157 effect on the behavior of planned management of consequences control.

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## 159 **Results and Discussion**

### 160 **Results**

#### 161 **Identifying the social, economic and environmental consequences of climate change**

162 In this research, in order to designing a Model of Planned Management Behavior (MPMB),  
163 identifying the social, economic and environmental consequences of climate change through  
164 semi structured and face-to-face interview methods and a brainstorming with a grounded theory  
165 approach was considered. The study sample of this research in the qualitative phase included

166 key experts who have knowledge of the consequences of climate change in Khuzestan  
167 province, which included: 10 university faculty members and 15 agricultural managers. For  
168 this purpose, Strauss and Corbin coding method was used to achieve specific goals (Strauss &  
169 Corbin, 1998). The current research included 25 in-depth interviews with experts and holding  
170 a brainstorming. The duration of the interviews was from 25 to 50 minutes and the  
171 brainstorming time was 200 minutes in two sessions. A total of 890 minutes of interviews were  
172 conducted. As a result, 71 concepts (initial codes) were expressed, and a total of 17  
173 subcategories were extracted.

174

#### 175 **Identifying social consequences of climate change**

176 A systematic process of coding was used to conduct a qualitative study. This qualitative study  
177 was conducted in the form of 3 stages of open coding, axial coding and selective coding using  
178 MAXQDA12 software.

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#### 180 **Open coding**

181 In the open coding phase, experts' statements about social consequences of climate change  
182 were analyzed and concepts were extracted from them. The results of the interview and the  
183 brainstorming session were identified and extracted in the form of 41 concepts. First, the main  
184 sentences under the title of concepts were extracted from direct quotes that had at least 5  
185 repetitions, and by combining similar concepts, 29 final concepts were identified and coded  
186 with the number of repetitions. Each of the codes was indicated by an S symbol. The results of  
187 open coding are shown in Table 1.

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204 **Table 1.** Conceptualization of data obtained from experts' answers for social consequences of  
 205 climate change (open coding).

Concepts (Initial Codes)	Code
The fields of agricultural employment have disappeared.	S1
The population working in the agricultural sector has decreased.	S2
Youth unemployment has increased.	S3
Immigration has increased and marginalization has grown.	S4
Life expectancy has decreased.	S5
Security problems have increased.	S6
Poverty has spread.	S7
Social welfare has decreased.	S8
Crime and theft have increased.	S9
Mental and psychological tensions, anger and frustration have appeared.	S10
Rural society has lost its freshness.	S11
Conflicts and ethnic and religious conflicts have increased.	S12
Self-confidence and productive motivations have decreased.	S13
The trading process has been disrupted.	S14
The desire for non-productive businesses and mediation has increased.	S15
Agriculture-related industries have been damaged.	S16
Public and collaborative works in villages have decreased.	S17
Local institutions and organizations have weakened.	S18
Ecotourism areas in the village have been destroyed.	S19
The income from tourism has decreased.	S20
Diseases and malnutrition have increased.	S21
The general health of the society has decreased.	S22
Self-reliance, independence and human dignity have disappeared.	S23
The style of dressing, food and rural techniques have disappeared.	S24
Increasing dissatisfaction and pessimism towards government support policies.	S25
The social values of the traditional beliefs and opinions have changed.	S26
The cohesion of rural and nomadic households has been broken.	S27
Family visits have decreased.	S28
Food security has decreased.	S29

206

### 207 Axial coding

208 In this step, the number of repetitions of concepts was determined and subcategories were  
 209 extracted. Based on the results of the axial coding of social consequences, 8 subcategories were  
 210 determined in the form of 29 concepts and with 296 repetitions (Table 2).

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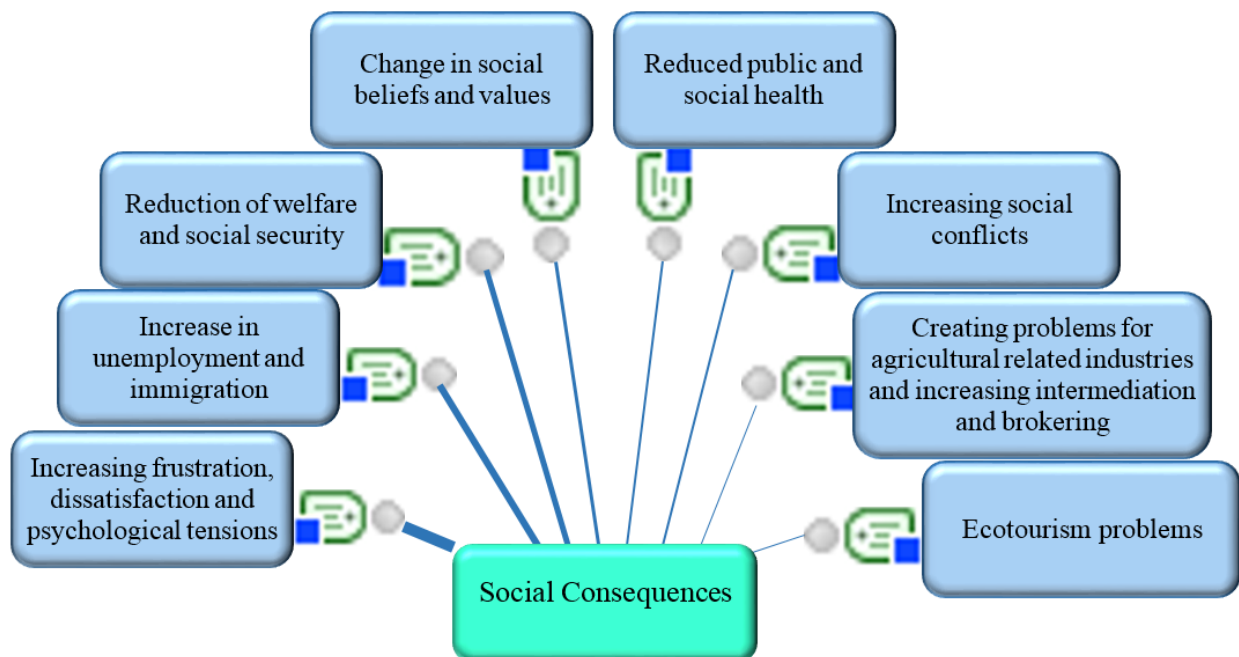
221 **Table 2.** Subcategories extracted from the concepts of social consequences.

Category	Subcategories	Concepts code	Repetitions
Social Consequences	Increase in unemployment and immigration	S1, S2, S3, S4	11, 15, 10, 9
	Reduction of welfare and social security	S6, S7, S8, S9	10, 8, 11, 13
	Increasing frustration, dissatisfaction and psychological tensions	S5, S10, S11, S13, S23, S25	8, 7, 11, 10, 9, 7
	Creating problems for agricultural related industries and increasing intermediation and brokering	S14, S15, S16	8, 9, 11
	Increasing social conflicts	S12, S17, S18	10, 11, 9
	Change in social beliefs and values	S24, S26, S27, S28	9, 11, 10, 8
	Reduced public and social health	S21, S22, S29	12, 15, 8
	Ecotourism problems	S19, S20	10, 9, 7

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223 **Selective coding**

224 In selective coding, the intensity of the relationship between sub-categories and categories was  
 225 determined based on the repetition of concepts in the form of a diagram. Figure 3 shows that,  
 226 increasing frustration, dissatisfaction and psychological tensions, increase in unemployment  
 227 and immigration, reduction of welfare and social security, change in social beliefs and values,  
 228 reduced public and social health, increasing social conflicts, creating problems for agricultural  
 229 related industries and increasing intermediation and brokering and ecotourism problems are,  
 230 based on priority, the most important social consequences of climate change.



231 **Figure 3.** Social consequences of climate change.  
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234 **Identifying economic consequences of climate change**235 **Open coding**

236 The results of the interview and the brainstorming session were identified and extracted in the  
 237 form of 36 concepts. First, the main sentences under the title of concepts were extracted from  
 238 direct quotes that had at least 5 repetitions, and by combining similar concepts, 24 final  
 239 concepts were identified and coded with the number of repetitions. Each of the codes was  
 240 indicated by an E symbol. The results of open coding are shown in Table 3.

241  
 242 **Table 3.** Conceptualization of data obtained from experts' answers for economic consequences  
 243 of climate change (open coding).

Concepts (Initial Codes)	Code
Decrease in income	E1
Decrease in purchasing power	E2
Increase in the price of agricultural products	E3
Reducing the amount of investment in product production	E4
Decrease in financial ability to repay loans	E5
Reducing the ability to guarantee loans	E6
Increase in production costs	E7
Reducing the production of products	E8
Fodder becoming more expensive in region	E9
Changing the occupation of farmers	E10
Reducing the number of livestock	E11
Reducing the financial ability of farmers in providing the necessities of life	E12
Increasing migration of villagers due to economic problems	E13
Reduction of productivity	E14
Reducing the performance of products	E15
Increasing seasonal and permanent unemployment of farmers	S16
Reduction of production efficiency	S17
Increase in the price of agricultural tools	E18
Reducing the productivity of agricultural land	E19
Reduction of production capacity	E20
Failure to cultivate various crops in the year	E21
Reduction of livestock production	E22
Reduction of water resources	E23
Reduction of financial support facilities	E24

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 245 **Axial coding**

246 In this step, the number of repetitions of concepts was determined and subcategories were  
 247 extracted. Based on the results of the axial coding of economic consequences, 5 subcategories  
 248 were determined in the form of 24 concepts and with 301 repetitions (Table 4).

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254 **Table 4.** Subcategories extracted from the concepts of economic consequences.

Category	Subcategories	Concepts code	Repetitions
Economic Consequences	Reducing the financial power and income of farmers	E1, E2, E5, E6, E12	11, 9, 13, 15, 14
	Increase in production costs	E7, E9, E18	14, 8, 15
	Reduction of product performance, efficiency, productivity and production capacity	E8, E11, E14, E15, E17, E19, E20, E21, E22, E23	9, 12, 11, 14, 12, 11, 10, 15, 8, 10
	Reduction of support facilities, investment, increase in product prices and reduction of people's purchasing power	E3, E4, E24	14, 12, 18
	Increase in immigration and unemployment	E10, E13, E16	12, 15, 19

255

256 **Selective coding**

257 Figure 4 shows that, reduction of product performance, efficiency, productivity and production  
 258 capacity, reducing the financial power and income of farmers, increase in immigration and  
 259 unemployment, reduction of support facilities, investment and increase in product prices and  
 260 reduction of people's purchasing power and increase in production costs are, based on priority,  
 261 the most important economic consequences of climate change.

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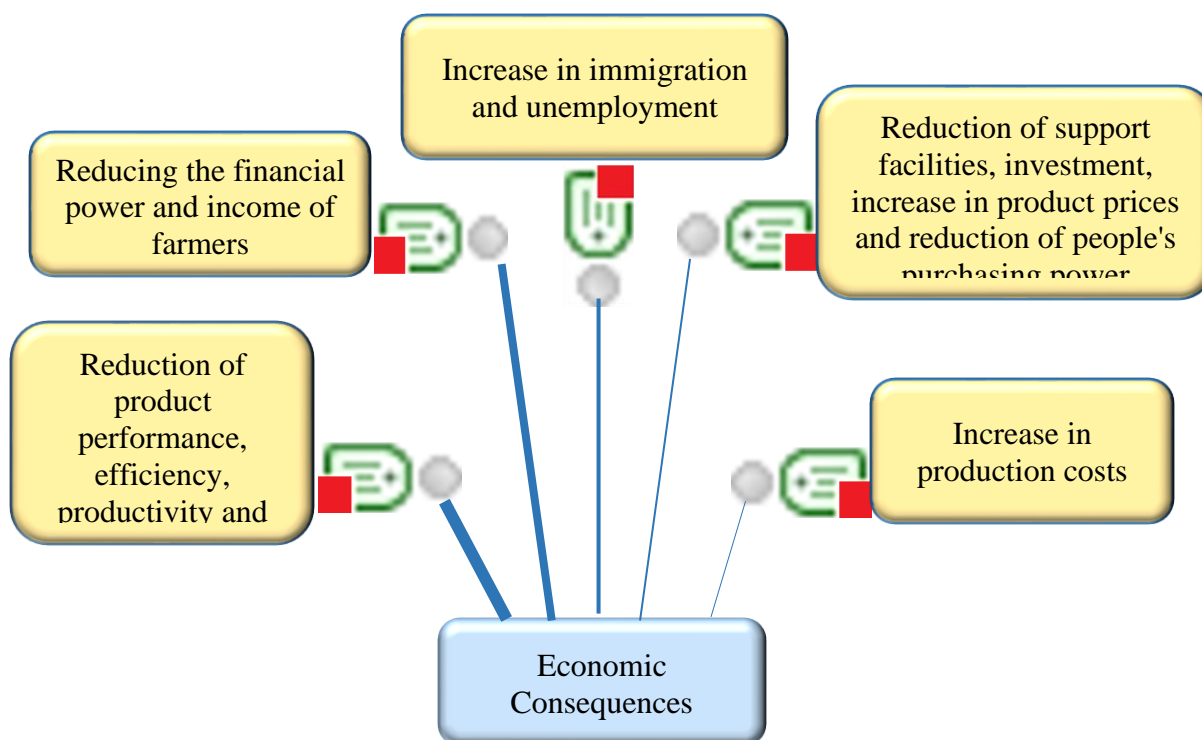
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284 **Figure 4.** Economic consequences of climate change.

288 **Identifying environmental consequences of climate change**289 **Open coding**

290 The results of the interview and the brainstorming session were identified and extracted in the  
 291 form of 28 concepts. First, the main sentences under the title of concepts were extracted from  
 292 direct quotes that had at least 5 repetitions, and by combining similar concepts, 18 final  
 293 concepts were identified and coded with the number of repetitions. Each of the codes was  
 294 indicated by an N symbol. The results of open coding are shown in Table 5.

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 296 **Table 5.** Conceptualization of data obtained from experts' answers for environmental  
 297 consequences of climate change (open coding).

Concepts (Initial Codes)	Code
Lowering of underground water, wells and aqueducts	N1
Drying of surface water such as springs	N2
The spread of pests and diseases to garden and agricultural products	N3
Reduction of farmers' rights	N4
Increase in dust and air pollution	N5
Soil erosion and destruction	N6
Reduction of vegetation and loss of pastures	N7
Conversion of agricultural and pasture lands to barren lands	N8
Saltiness and bitterness of water	N9
Increase in the attack of beasts on the village environment	N10
Pollution of underground water sources	N11
soil pollution	N12
Destruction of soil microorganisms	N13
Destruction of forests	N14
Extinction of some animal species	N15
Extinction of some plant species	N16
Reliance on chemical inputs	N17
Pollution of rivers	N18

298  
 299 **Axial coding**

300 In this step, the number of repetitions of concepts was determined and subcategories were  
 301 extracted. Based on the results of the axial coding of economic consequences, 4 subcategories  
 302 were determined in the form of 18 concepts and with 216 repetitions (Table 6).

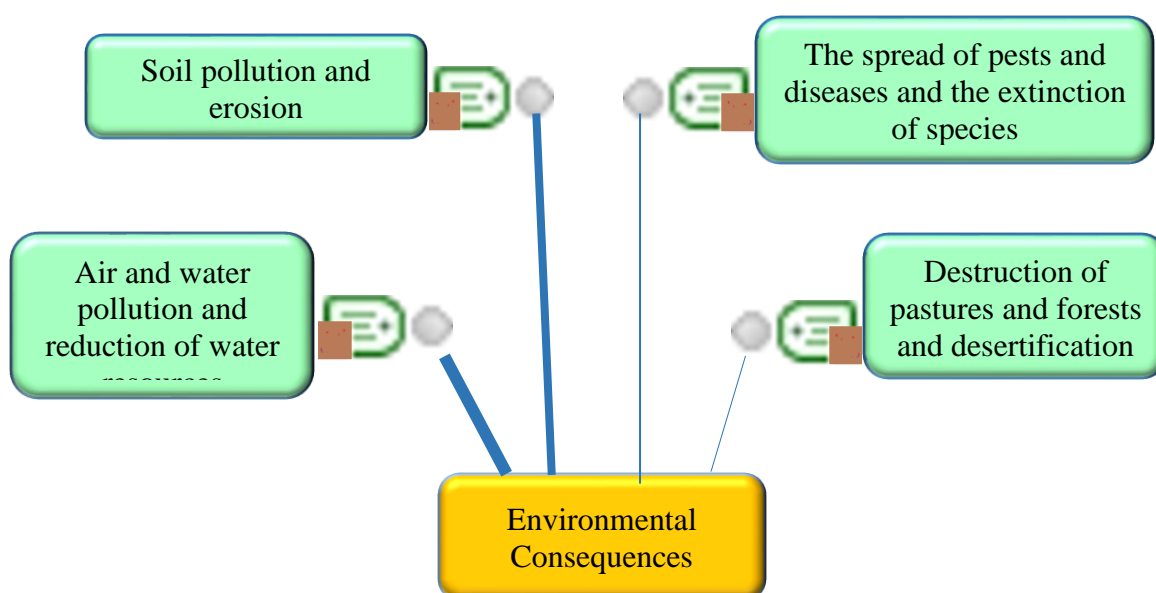
303  
 304 **Table 6.** Subcategories extracted from the concepts of environmental consequences.

Category	Subcategories	Concepts code	Repetitions
Environmental Consequences	Air and water pollution and reduction of water resources	N1, N2, N4, N5, N9, N11, N18	14, 11, 12, 15, 13, 8, 11
	Soil pollution and erosion	N6, N12, N13, N17	12, 15, 12, 8
	Destruction of pastures and forests and desertification	N7, N8, N14,	10, 15, 14
	The spread of pests and diseases and the extinction of species	N3, N10, N15, N16	10, 9, 13, 14

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308 **Selective coding**

309 Figure 5 shows that, air and water pollution and reduction of water resources, soil pollution  
 310 and erosion, the spread of pests and diseases and the extinction of species, destruction of  
 311 pastures and forests and desertification are, based on priority, the most important  
 312 environmental consequences of climate change.



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331 **Figure 5.** Environmental consequences of climate change.

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333 **Research model test (PMB model for climate change management)**

334 To test the research model and hypotheses, the SEM was used using Smart PLS<sub>3</sub> software. The  
 335 fit of the structural model was also evaluated using  $R^2$ ,  $Q^2$  and GOF criteria. According to the  
 336 results of Table 7, the fit criteria had acceptable amount.

337  
338 Table 7.  $R^2$ ,  $Q^2$  and GOF amount for fitting the outcomes model.

Construct	$R^2$	$Q^2$	GOF
PMB	0.837	0.721	0.731

339  
340 Next, the research hypotheses were tested. The way to decide to reject or confirm the  
 341 hypotheses is to compare the t-value with the numbers +1.96 and -1.96. If the calculated values  
 342 are between these two values, the desired hypothesis is rejected, and if it is not, the hypothesis  
 343 is confirmed. The results of the hypothesis test are presented in Table 8 and the final research  
 344 model is presented in Figures 6 and 7.

345 The results of table 8 showed that understanding the social consequences ( $\beta=0.61$ ), economic  
 346 consequences ( $\beta=0.72$ ), environmental consequences ( $\beta=0.58$ ), feeling the need for risk

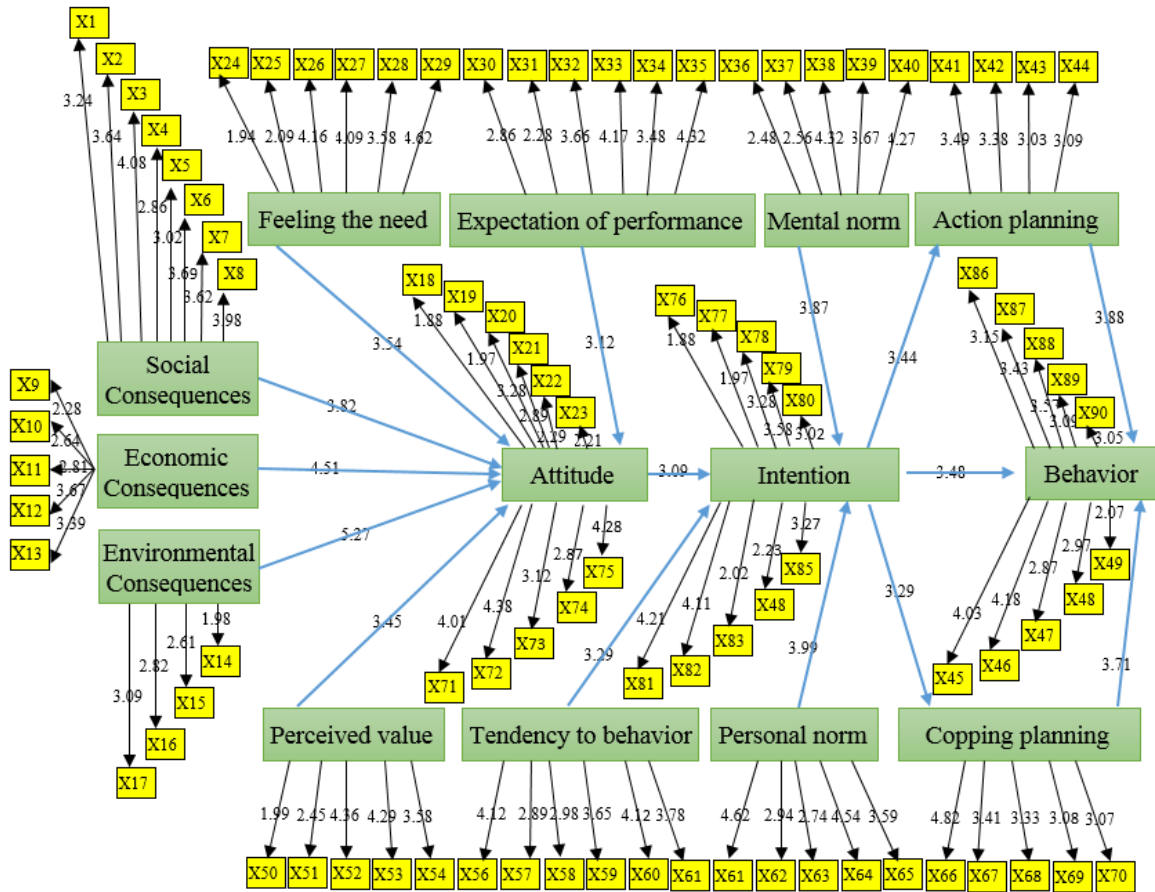
347 management ( $\beta=0.62$ ), perceived value ( $\beta=0.61$ ) and expectation of performance ( $\beta=0.67$ ) had  
 348 a positive and significant effect on attitude towards the consequences of climate changes. Also  
 349 attitude towards the consequences of climate changes ( $\beta=0.58$ ), tendency to control behavior  
 350 ( $\beta=0.74$ ), personal norm ( $\beta=0.49$ ) and mental norm ( $\beta=0.69$ ) had a positive and significant  
 351 effect on planned management intention to control the consequences of climate changes. In  
 352 addition, intention of planned management ( $\beta=0.73$ ), action planning ( $\beta=0.64$ ) and coping  
 353 planning ( $\beta=0.61$ ) had a positive and significant effect on PMB.

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**Table 8.** The results of the research hypotheses test

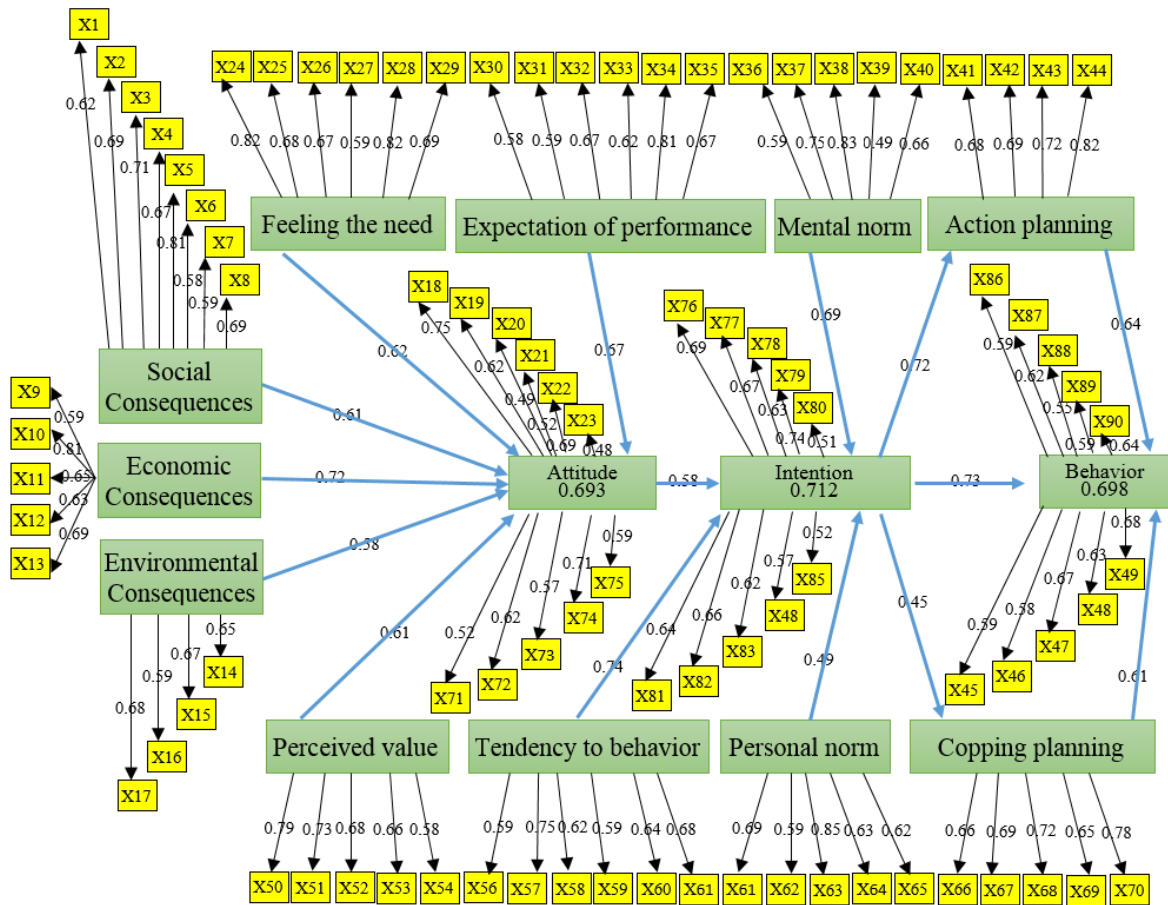
Hypotheses	Independent	Dependent	Path coefficient	t-value	R <sup>2</sup>	Test results
H1	Understanding the social consequences	Attitude	0.61	3.82	0.39	Confirmed
H2	Understanding the economic consequences	Attitude	0.72	4.51	0.53	Confirmed
H3	Understanding the environmental consequences	Attitude	0.58	5.27	0.31	Confirmed
H4	Feeling the need for risk management	Attitude	0.62	3.54	0.38	Confirmed
H5	Perceived value	Attitude	0.61	3.45	0.35	Confirmed
H6	Expectation of performance	Attitude	0.67	3.12	0.45	Confirmed
H7	Attitude	Planned management intention	0.58	3.09	0.31	Confirmed
H8	Tendency to control behavior	Planned management intention	0.74	3.29	0.55	Confirmed
H9	Personal norm	Planned management intention	0.49	3.99	0.28	Confirmed
H10	Mental norm	Planned management intention	0.69	3.87	0.47	Confirmed
H11	Planned management intention	Action planning	0.72	3.44	0.53	Confirmed
H12	Planned management intention	Copping planning	0.45	3.29	0.25	Confirmed
H13	Intention of planned management	PMB	0.73	3.48	0.54	Confirmed
H14	Action planning	PMB	0.64	3.88	0.39	Confirmed
H15	Copping planning	PMB	0.61	3.71	0.35	Confirmed

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Figure 6. t-Values for relationships between factors and variables of PMB causal model.



359 **Figure 7.** The values of the standardized loadings for each of the factors and variables of the  
 360 PMB causal model  
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363 Based on the results of Figure 6, which is the output of Smart PLS3 software, it can be stated  
 364 that 69.3% of attitude towards the consequences of climate changes are explained by the  
 365 independent variables of social, economic and environmental consequences, feeling the need  
 366 for risk management, and perceived value. Also, 71.2% of changes in planned management  
 367 intention to control the consequences of climate changes are affected by the attitude towards  
 368 the consequences, tendency to control behavior, personal and mental norms, and finally 69.8%  
 369 of changes in PMB of control the consequences of climate changes are caused by the use of  
 370 planned management intention to control the consequences, action planning and copping  
 371 planning.

372  
 373 **Discussion**

374 According to the results of the research, the first hypothesis "understanding the social,  
 375 economic and environmental consequences has a significant effect on the attitude towards the  
 376 consequences" is confirmed. This finding is consistent with the results of Chaudhary and Bisai



377 (2018) and Felicilda-Reynaldo et al., (2018). In fact, as people's understanding of the  
378 consequences increases, their attitude will change. Improving knowledge and information is  
379 very effective in improving people's understanding.

380 According to the results of the research, the second hypothesis "feeling the need for risk  
381 management has a significant effect on the attitude towards social, economic and  
382 environmental consequences" is confirmed. This finding is consistent with the results of  
383 Hillson and Murray-Webster (2006) and Wang and Yuan (2011). The consequences of climate  
384 change are an important risk that affects the agricultural sector. Sensing the need for risk  
385 management will lead to improved perceptions and a favorable attitude towards adopting  
386 management strategies to control the consequences of climate change.

387 According to the results of the research, the third hypothesis "the perceived value has a  
388 significant effect on the attitude towards social, economic and environmental consequences" is  
389 confirmed. This finding is consistent with the results of Hassan et al., (2022). Understanding  
390 the economic, social and environmental value of controlling the consequences of climate  
391 change in the agricultural sector is effective in creating the necessary grounds for optimizing  
392 individuals' attitudes in carrying out planned management actions.

393 According to the results of the research, the fourth hypothesis "the expectation of performance  
394 has a significant effect on attitude towards social, economic and environmental consequences."  
395 is confirmed. This finding is consistent with the results of Collado & Evans (2019). According  
396 to the results of the research, the fifth hypothesis "the attitude towards social, economic and  
397 environmental consequences has a significant effect on the planned management intention to  
398 control the consequences." is confirmed. This finding is consistent with the results of  
399 Kwistianus et al., (2020) and Moon (2021). According to the results of the research, the sixth  
400 hypothesis "the tendency to control behavior has a significant effect on the planned  
401 management intention to control the consequences." is confirmed. This finding is consistent  
402 with the results of Ahmed et al., (2021) and Close et al., (2018).

403 According to the results of the research, the seventh hypothesis "the personal norm has a  
404 significant effect on planned management intention to control consequences." is confirmed.  
405 This finding is consistent with the results of Roos & Hahn (2019). According to the results of  
406 the research, the eighth hypothesis "the mental norm has a significant effect on planned  
407 management intention of controlling consequences." is confirmed. This finding is consistent  
408 with the results of Ateş (2020).

409 According to the results of the research, the ninth hypothesis “the intention of planned  
410 management of consequences control has a significant effect on the behavior of planned  
411 management of consequences control.” is confirmed. This finding is consistent with the results  
412 of Trivedi et al., (2018) and Sun et al., (2018). According to the results of the research, the  
413 tenth hypothesis “the intention of planned management of consequences control has a  
414 significant effect on the action planning of applying the planned management of consequences  
415 control of climate change.” is confirmed. This finding is consistent with the results of Brown  
416 et al., (2018).

417 According to the results of the research, the eleventh hypothesis “the intention of planned  
418 management of consequences control has a significant effect on the coping planning of  
419 planned management of consequences control of climate change.” is confirmed. This finding  
420 is consistent with the results of Strong et al., (2018). According to the results of the research,  
421 the twelfth hypothesis “the action planning of applying the planned management of  
422 consequences control has a significant effect on the behavior of the planned management of  
423 consequences control.” is confirmed. This finding is consistent with the results of Brown et al.,  
424 (2018) and Strong et al., (2018).

425 According to the results of the research, the thirteenth hypothesis “the coping planning of  
426 planned management of consequences control has a significant effect on the behavior of  
427 planned management of consequences control.” is confirmed. This finding is consistent with  
428 the results of Brown et al., (2018) and Strong et al., (2018). Policymakers need to benefit from  
429 the participation of users to achieve desired results. Therefore, policymakers can use the results  
430 of this research to control the consequences of climate change on the agricultural sector.  
431 According to the objectives of this research and the identified results, it is possible to identify  
432 the consequences of climate change in the agriculture sector. Also, factors affected on attitude  
433 towards social, economic and environmental consequences of climate change can be  
434 understood. Next, factors affected on planned management intention of controlling  
435 consequences of climate change were analyzed and factors affected on the behavior of planned  
436 management of consequences control of climate change and in this way, necessary  
437 policymaking was planned to manage the consequences of climate change.

### 438 439 **Conclusions**

440 Based on the results, it was found that feeling the need for risk management has a significant  
441 effect on the attitude towards social, economic and environmental consequences. Therefore, it

442 is recommended to increase the awareness of the audience regarding risk management  
443 mechanisms. The findings showed that the perceived value of strategies to control the effects  
444 of climate change has a significant impact on the attitude towards social, economic and  
445 environmental consequences, so it is recommended to take necessary measures to increase the  
446 understanding of the value of strategies to control climate change. Expectation of performance  
447 has a significant effect on attitude towards social, economic and environmental consequences,  
448 therefore it is recommended to take the necessary measures to increase the expectations of the  
449 users of their performance by holding training and extension classes. Also, the attitude towards  
450 consequences has a significant effect on the planned management intention to control the  
451 consequences. Therefore, it is recommended to take the necessary measures to optimize the  
452 attitude of farmers in the field of strategies to control the effects of climate change. Further, the  
453 tendency to control behavior has a significant effect on the planned management intention to  
454 control the consequences. Therefore, it is recommended to improve the tendency of farmers to  
455 control behavior by holding motivational and participatory courses. Also, the personal norm  
456 has a significant effect on planned management intention to control consequences. Therefore,  
457 it is recommended to distribute brochures, tracts and announcements warning about the effects  
458 of climate change among farmers. Based on the findings, the mental norm has a significant  
459 effect on planned management intention of controlling consequences. The research results  
460 showed that the intention of planned management of consequences control has a significant  
461 effect on the behavior of planned management of consequences control. It is suggested that the  
462 necessary incentives by the government for farmers to use strategies to control the  
463 consequences of climate change. This research provides valuable assistance to planners, policy  
464 makers and farmers in completing the existing gap for PMB development. In this research, to  
465 identify the consequences of climate change, the status of the users' attitude and the factors  
466 affecting it in this regard, planned management intention and the factors affecting it and finally  
467 Planned management behavior, and the effects of attitude on intention and the effects of  
468 intention on the occurrence of behavior were identified. The application of these results on the  
469 emergence of planned behavior to control the consequences of climate change will be very  
470 important and vital.

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549 طراحی الگوی رفتار مدیریت برنامه ریزی شده برای پیامدهای تغییر اقلیم در کشاورزی ایران

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551 عبدالواحد کعبی، کوروش روستا، سعید محمدزاده، و رضا برادران

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#### چکیده

554 تغییر اقلیم ایران در سال های اخیر باعث کاهش بارندگی و افزایش دما و خشکسالی های مداوم شده  
555 است. تولیدات کشاورزی در ایران تحت تأثیر تغییرات اقلیمی قرار گرفته و با کاهش تولید محصولات  
556 مختلف مواجه شده است. بنابراین استفاده از راهکارهایی برای مدیریت پیامدهای تغییرات اقلیمی  
557 ضروری است. هدف از این تحقیق طراحی مدل رفتار مدیریت برنامه ریزی شده (MPMB) برای  
558 پیامدهای تغییر اقلیم در کشاورزی ایران بود. در این تحقیق از روش ترکیبی استفاده شد. نمونه پژوهش  
559 مرحله کیفی شامل 25 خبره کلیدی و در بخش کمی 100 کارشناس بود. بر اساس نتایج کیفی، پیامدهای  
560 تغییر اقلیم شناسایی شد. در مرحله کمی مشخص شد که 69.3 درصد نگرش نسبت به پیامدهای تغییرات  
561 اقلیمی با نگرانی در مورد پیامدهای اجتماعی، اقتصادی و زیست محیطی، احساس نیاز به مدیریت  
562 ریسک و ارزش درک شده تبیین می شود. همچنین 71.2 درصد از تغییرات در قصد مدیریت  
563 برنامه ریزی شده برای کنترل پیامدها متأثر از نگرش به پیامدها، تمایل به کنترل رفتار، هنجارهای  
564 شخصی و ذهنی است. در نهایت، 69.8 درصد از تغییرات PMB برای کنترل پیامدهای تغییرات اقلیمی  
565 ناشی از استفاده از قصد مدیریت برنامه ریزی شده برای کنترل پیامدها، برنامه ریزی اقدام و برنامه  
566 ریزی مقابله است. نتایج این تحقیق کمک قابل توجهی به مدیریت برنامه ریزی شده برای کنترل پیامدهای  
567 تغییر اقلیم در بخش کشاورزی خواهد کرد و راه را برای تحقیقات آینده در زمینه کنترل پیامدهای تغییرات  
568 اقلیمی هموار می کند.

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